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## JULY 1963

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\*Stetson, J.B., and Jessup, G.V.S.: Anesth. & Analg. 41:203, 1962.

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pH	FECAL pH IN CONSTIPATION <sup>2</sup>			
8				
7.5	...	.		
7	...	....		
6.5	.	...	...	
6	...	...	.....	...
5.5	.....		..	...
5	....	....	....	.....
	Initial	1st Wk.	2nd Wk.	3rd Wk.

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**References:** 1. Raddin, J. B., and Oowell, L. B.: *Amer. J. Gastroent.* 37: 24-40 (January) 1962. 2. Calloway, N. O.: Paper to be published. 3. Hootnick, H. L.: *J. Amer. Geriatr. Soc.* 4:1021-1030 (October) 1956. 4. Bruce, J. W.: *Pediat. Clin. N. Amer.* 8:163-165 (February) 1961. 5. Reichert, J. L.: *Pediat. Clin. N. Amer.* 2:527-538 (May) 1955.

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## Medical Investigations Urged To Cut Small Plane Crashes

If physicians took part in investigations of small plane crashes, flying could be made safer, Maj. Gen. Oliver K. Niess, Surgeon General, United States Air Force, stated recently.

Writing in the June 1 *Journal of the American Medical Association*, Gen. Niess said: "In 1961 there were 1,581 deaths attributable to aviation accidents in the United States and its armed forces overseas. Nearly half of these deaths occurred in general aviation—the largest fleet of nonmilitary, non-commercial aircraft that private citizens in this country use for pleasure and business.

"In 1961 these aircraft were involved in 437 fatal and 4,128 nonfatal accidents. Medical participation in the investigation of these 4,565 crashes was scanty. . . ."

The commercial aviation disasters and military crashes almost always are investigated by medical personnel in this country, Gen. Niess said, while in general aviation accidents, there may be only one investigator from the Federal Aviation Agency or the Civil Aeronautics Board at the scene.

It would be impossible to list all the changes made in aircraft structures and operational regulations as a result of aircraft accident investigations in which physicians played a key role, he said.

The number of deaths and injuries will increase greatly in the coming years as the aviation industry continues to expand unless physicians cooperate with other interested parties to make flying even safer, Gen. Niess said.

With the cooperation of the coroner or medical examiner, he said, a physician investigating the accident should be able to study the wreckage and bodies as completely as possible to determine the cause of the fatal injuries and, in some cases, the cause of the accident. All of the data, including the physician's recommendations, should then be reported to the appropriate agency, he said.

In addition to the recommendations that may grow out of a single investigation, he said, several governmental agencies are conducting a continuing analysis of the results of aircraft accident investigations throughout the United States in a manner that allows for a logical advance in flight safety. Statistics kept on all accidents are studied to bring to the attention of the agency any trend that may provide a clue to factors that are not obvious in a single accident, he said.

The physician's findings and recommendations will afford the responsible agencies of government the information necessary to substantiate their requirements for changes to make flying safer, Gen. Niess said.

Co-authors of the article are Col. E. C. Lentz, USAF, MC, Col. Frank M. Townsend, USAF, MC, Capt. W. Harley Davidson, USAF, MC, and Capt. Richard M. Chubb, USAF, MC, Washington, D. C.



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5. Eczematous Dermatitis	18 (100%)	0	18
6. Nummular Eczema	12 (100%)	0	12
7. Anogenital Pruritus	11 (92%)	1	12
8. Psoriasis	147 (95%)	8	155
9. Miscellaneous Dermatoses	88 (94%)	6	94
<b>GRAND TOTAL</b>	<b>530 (96%)</b>	<b>20</b>	<b>550</b>

\*SAMITZ, M. H.: CLINICAL EVALUATION OF TOPICAL FLUOCINOLONE ACETONIDE CREAM, *CURRENT THERAPEUTIC RESEARCH* 4: 589 (1962).

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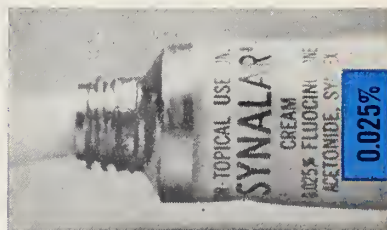
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technique discontinued. The lesions should be carefully inspected between dressings to determine whether infection is developing. Folliculitis, miliaria or pyoderma have been seen infrequently with the use of this technique. The development of infection requires appropriate antibacterial therapy and discontinuation of the occlusive dressing method. While lesion relapses can be expected to occur in most patients upon discontinuation of topical corticosteroid therapy, remissions may persist for several weeks to several months in favorable cases. The patient whose disease is in an active stage, with recent appearance of new lesions, may not be a good candidate, and may show early relapse, relative resistance to topical corticosteroid, or the development of new lesions.

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## Growth Stimulated in Girl's Stunted Leg

A medical team told how a girl's stunted leg was stimulated to grow until it equaled the length of the other leg.

The report by Drs. Allen D. Meyer, Joseph J. Muenster, John H. Olwin, Fred S. Shapiro, and John S. Graettinger, Presbyterian-St. Luke's Hospital, Chicago, was published in the May 25 *Journal of the American Medical Association*.

More significant than the technique, which is not new, were the careful studies of the patient carried out before, during, and after the four and a half years it took for the left leg to grow an extra inch and catch up with the right leg. The studies will aid physicians in determining when use of the potentially hazardous procedure is justified.

The technique, pioneered in the 1950s by Dr. J. M. Janes and coworkers at Mayo Clinic, is based on an observation made as early as 1853 that increasing the circulation in a limb promotes its growth.

The procedure used by the Chicago group, patterned after that of Dr. Janes, consisted of surgically creating a half-inch communication between the femoral artery and the femoral vein in the leg, Dr. Graettinger said.

In the case described, the patient was eight years

old when the operation was performed in January, 1955. By the end of the summer of 1959, when she was 13, the two limbs were equal, Dr. Graettinger said, and in October of that year the communication between the two blood vessels was closed.

Following the initial operation, he said, the heart's output is necessarily increased and to compensate the heart becomes enlarged to some degree.

However, after the second operation, he said, the girl's blood pressure and heart rate returned to normal and four months later, the size of her heart also returned to normal.

"This procedure may be, to date, the most effective method for diminishing the disparity between the lengths of two limbs," he said. "In a child with a normal heart the creation of such a fistula [communication] may impose no cardiac hazard. However, in some children, especially those with cardiac disease, there may be serious cardiovascular consequences."

Dr. Graettinger said his group had performed the technique in three other children. In a larger series, he said, some patients had not benefited from the technique.

The incidence of stunted limbs will decrease as a result of the poliomyelitis vaccines, he said, but the problem will remain for those in whom the condition is caused by injury or congenital factors.

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A unique method of electrically stimulating the heart has been found to be useful in emergency situations and to pace the heart during surgery, it was reported in the May 13 *Journal of the American Medical Association*.

The technique, described in two *Journal* reports, consists of inserting an electrode into a vein, preferably the right external jugular vein in the neck, and guiding it into the right ventricle of the heart. Once inside the heart chamber and firmly secured, the electrode is attached to a power source, either a battery or a wall plug.

Direct contact between the electrode and the ventricle wall is not needed to stimulate the heart and the current required is very small, according to the reports.

The intravenous electrode technique can be used as an urgent measure in patients with heart block who do not respond satisfactorily to drug treatment, or as a means of pacing patients with heart block through various surgical procedures, including implantation of an electrical pacemaker in the heart muscle, a *Journal* editorial said.

Heart block is a condition in which the heart is so damaged by disease that the heart beat is slowed or occurs in spasms. This can lead to fainting spells and weakness, or heart standstill and death.

(Continued on Page 38)



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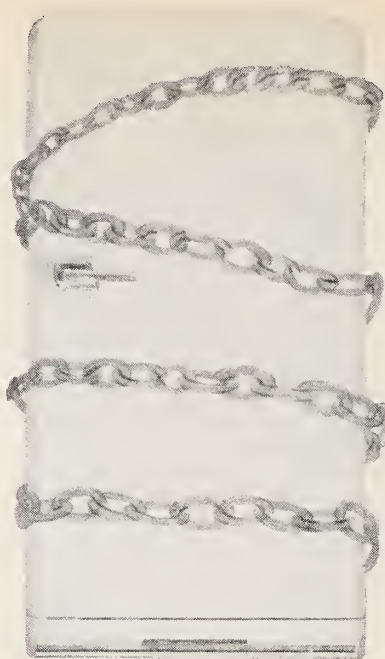
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# California M E D I C I N E

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## Vaginal Smears

### A Plea for More Critical Evaluation

MARGARET T. McLENNAN, M.D., and CHARLES E. McLENNAN, M.D., Palo Alto

• To determine whether a conscious effort to reduce the incidence of equivocal (Class III) vaginal cytologic smear readings might have demonstrable clinical value, we have compared a previous study of our predictive efforts with a recent experience in screening a similar number of patients.

It was possible to achieve an appreciable reduction in the incidence of Class III smears—from 2.4 per cent to 0.6 per cent. There was a modest increase in the reliability of the Class III smear as an indicator of cancer and a very notable increase in the reliability of the Class IV and V interpretations. While only 66 per cent of the earlier group with Class IV and V smears were shown to have cancer, 86 per cent of the

present series with IV and V readings had malignant disease (97 per cent of the Class V group).

The ultimate yield of malignancies was similar in the two series, but theoretically the overloading of Classes III, IV and V with women who do not actually have cancer necessarily leads to large numbers of diagnostic surgical procedures that might be avoided. Class III should be used to denote merely a temporary state of inconclusiveness rather than a real suspicion of cancer. With proper collaboration between physician and cytologist, most of the initially confusing situations can be either upgraded or downgraded to the proper rating, and eventually the bulk of patients standing to profit from conization will fall into Classes IV or V.

IN A PREVIOUS PUBLICATION<sup>3</sup> we reviewed the predictive value of "positive" vaginal smears interpreted in the gynecologic cytology laboratory at Stanford Hospital in San Francisco during the period 1955-57. In 1959 Stanford's School of Medicine was moved to a new site on the Stanford campus in Palo Alto, and in October of that year our present gynecological cytology laboratory, under new direction, received its first specimens. Suspecting that a modified interpretive philosophy may have improved the predictive value of a "Stanford

smear," we have compared our experience of the past three years with that previously reported from San Francisco. The present study suggests that we were in error when we pointed out the great value of a high index of suspicion in the interpretation of smears—that is, liberal assignment of Class III and IV ratings to equivocal specimens—and we now propose a somewhat different approach to the problem of the questionable smear.

A study of this sort emphasizes not only the subjective personal element in the interpretation of smears but also the importance of quality and anatomic source of the specimen in question. The physician must understand and appreciate the subtle meanings concealed in the necessarily cryptic re-

From the Department of Obstetrics and Gynecology, Stanford University School of Medicine, Palo Alto, California.

This study was supported in part by a grant (USPHS C-5838) from the National Cancer Institute of the National Institutes of Health, U. S. Public Health Service.

Submitted May 23, 1963.

ports from the laboratory of his choice. Free exchange of information between clinician and cytologist may be crucial in resolving various problems, and the patient should be protected from the hazards of hasty decisions based on inadequate evidence.

#### TECHNIQUE

Certain differences in conditions between our previous study and the present one, other than geographical location of the new laboratory, should be noted. The entire personnel (including the physician-director) is different, but the staining methods and other technicalities in processing the slides have not been changed. The technique recommended for obtaining smears is now somewhat different: Whereas previously vaginal pool material collected on the posterior blade of a speculum had been favored, we now insist upon material from the cervical os or lower cervical canal in addition to that from the pool. Cells from both sources may be placed separately on the two halves of a single glass slide, as recommended by Frost,<sup>1</sup> or two slides may be used if a larger sample from either source is desired. Although we strongly favor this method of collection, unfortunately not all specimens submitted are technically as good as we would wish. But we are convinced that the inclusion of material from the cervical os or lower canal, obtained with a cotton-tipped applicator or by light scraping with the Ayre spatula, is absolutely vital for proper screening of patients for cervical cancer. To insure good cellular detail, the slide must be placed in fixative solution (95 per cent ethyl alcohol) *at once*.

Although we still use a modified form of the original five classes of Papanicolaou in evaluating a smear, our present interpretation of CLASSES III and IV is somewhat different from that used in the 1958 series. The interpretation we have applied as conscientiously as we possibly can is noted in Table 1.

Because the previous CLASS III legend<sup>3</sup>—"NEGATIVE-Atypical cells-suspicious-repeat"—seemed ambiguous to us, we now use the CLASS III designation to denote the really *inconclusive* smear, and we request that a repeat smear be submitted as soon as possible. After examining the second smear, we make a determined effort to abandon the CLASS III designation if at all possible, and to take a more definitive stand by either upgrading or downgrading. Of course this is not always possible and a small number of patients, even after several successive smears that can never confidently be called CLASS IV, will ultimately be shown to have malignant disease. In some laboratories the designation "CLASS III" carries a definitely suspicious connotation, while in others it may be considered negative for cancer

TABLE 1.—Categories of cervicovaginal smears reported in cancer screening

Class	Type of Cells	Kind of Smear
I.....	Typical normal cells	Negative
II.....	Slightly atypical cells	Negative
III.....	Inconclusive	Inconclusive (repeat)
IV.....	Atypical cells	Suspicious for cancer
V.....	Atypical cells consistent with malignant disease	Positive

cells; but we find it more helpful to consider CLASS III clearly *inconclusive* and hopefully a temporary state occasioned by the quality of the sample at hand.

Our interpretation of CLASS IV is "suspicious" that is, a smear containing atypical cells suspicious for malignant disease. CLASS V is the only genuinely "positive" rating and means a smear containing cells we believe to be consistent with malignant change. In the earlier series both CLASS IV and CLASS V smears were considered to be "positive." We have made no effort to distinguish between carcinoma-in-situ and invasive carcinoma by denoting the former as CLASS IV and the latter as CLASS V. If we are reasonably certain that malignant cells of either type are present, the smear is graded as CLASS V. Opinion as to the type of lesion thought to be represented by the cells is included in the remarks appended to the classification.

#### COMPARATIVE RESULTS IN TWO SERIES

It seems interesting that quite by chance our previous report included 15,600 smears from 11,711 women, while our current study involves 15,512 smears from 11,031 patients. The previous report dealt with smears of CLASSES IV and V as a unit since these were both considered "positive," and specimens from 165 patients (1.4 per cent of those screened) were given this "positive" label. In the earlier report 275 women, or 2.4 per cent of the total number of women examined, received CLASS III as the highest rating applied to their smears. In the present group of 11,031 patients, 50 (0.45 per cent) had CLASS IV and 81 (0.73 per cent) had CLASS V smears. Thus CLASSES IV and V together were assigned to 1.2 per cent of those screened as compared with 1.4 per cent in the earlier series. Previously the smears from 275 women (2.4 per cent of all examined) were CLASS III, but in the recent series only 65 women (0.6 per cent of those screened) had CLASS III smears as their "worst" category. (See Table 2.)

After the publication of our first report, we reviewed a large group of patients with CLASS III smears as interpreted in the San Francisco laboratory to determine how many of them subsequently



TABLE 2.—Comparison of two laboratories with respect to incidence of Classes III, IV and V smears, and incidence of proven cancers in the three classes

	San Francisco Series			Palo Alto Series		
	Number	Per Cent of Total	Per Cent with Cancer	Number	Per Cent of Total	Per Cent with Cancer
Smears.....	15,600			15,512		
Patients.....	11,711			11,031		
Patients with						
CLASS III.....	275	2.4	8.2	65	0.6	13.0
CLASS IV*.....	165*	1.4	66.0	50	0.5	68.0
CLASS V*.....				81	0.7	97.0

\*CLASSES IV and V were combined in the 1958 series.

were shown to have cancer. In this group of women, CLASS III was the highest evaluation ever given no matter how many repeat smears were examined. Omitting the patients in whom known cancer (in most cases previously treated) existed, 8 per cent of the women yielding CLASS III specimens on one or more occasions (never IV or V) were ultimately shown to have a malignant lesion. In our present series, with its lower incidence of CLASS III reports, 10 of the 65 patients had previously been treated for cancer. Omitting these, 7 of 55 patients (13 per cent) with CLASS III smears have been found to have carcinomas.

In the 1958 report, CLASSES IV and V were considered together as "positive," and 66 per cent of the patients in this group were shown by tissue examination to have a malignant lesion. At that time it was emphasized that obtaining at least two sequential positive smears before subjecting the patient to tissue examination substantially increased the percentage of patients showing both positive smears and positive tissue. In the current study CLASSES IV and V are considered separately for reasons already given. We had 50 patients whose "highest" gradation was IV. Of these, 34 (68 per cent) were shown by tissue examination to have cancer; 13 were considered to be cancer-free and three who are still being followed have uncertain final diagnosis.

Among those with cancer, 40 per cent were known by at least someone to have cancer at the time the smear was submitted, while in another 30 per cent of the group there was some degree of suspicion at the time of taking the smear—an atypical smear taken elsewhere, a suspicious biopsy taken elsewhere, or at least a clinically suspicious history or lesion. In the remaining 30 per cent of this CLASS IV group (11 patients) there was no suspicion of abnormality of any kind before the cytologic report. Again the value of repeated smears is apparent—only one of the 13 women shown to be cancer-free

had had more than a single CLASS IV smear examined before tissue was obtained by conization. Additional smears might have been very worthwhile for the other 12 patients.

It is enlightening for cytologists to continually review smears in cases in which their judgment is not confirmed by subsequent tissue examination. After re-studying our CLASS IV smears from patients in whom cancer was not found, we discovered that the sources of "error" in interpretation of CLASS IV smears in this series are similar to those reported in the earlier study. All 13 smears erroneously classed as "suspicious" (IV) showed evidence of pronounced inflammation, and in nine of them the *Trichomonas vaginalis* organism was identified. This parasite, with its destructive effects on cells of cervical and vaginal epithelium in certain patients, continues to be of serious concern in the interpretation of smears. Because *Trichomonas vaginalis* is commonly found also in association with both carcinoma-in-situ and invasive carcinoma, and because the affected cells sometimes mimic the atypia associated with these more serious lesions, the differentiation between "atypical benign" cells and cells "suspicious for malignancy" in the presence of this organism may pose a very difficult problem. We cannot agree with Koss in his belief that this confusion should never exist.<sup>2</sup> When we receive such a problem smear for evaluation, we often request the physician to treat the patient intensively for the *Trichomonas* infection for a period of two to three weeks and then repeat the smear. If the atypical cells disappear, or if the cellular abnormalities considerably diminish in severity, we continue periodic examination of smears until all suspicion of cancer has been removed. If, however, the smears contain truly suspicious cells, these will persist even after treatment, and further investigation then may be carried out. Other causes for suspicion in this group of patients who were subsequently shown to be free of cancer were (1) atypical vacuolated cells in two patients (one had a large endocervical polyp), (2) severe inflammation associated with atrophic epithelium in an elderly patient, and (3) trophoblastic syncytial cells associated with severe inflammation.

The smears from 81 patients were interpreted as CLASS V, and 79 of these (97 per cent) have been shown to have malignant disease. A 76-year-old patient, previously irradiated for carcinoma of the cervix, and in whose post-treatment smears small atypical cells were interpreted as "recurrent" cells, is still being followed. The other unproven diagnosis was in the case of a patient who had only a small punch biopsy interpreted as "leukoplakia of the cervix with marked hyperparakeratosis and epi-



thelial dysplasia." She has refused further investigative procedures. Of the 79 patients with proven cancer, 50 had known malignant disease at the time the smears were taken, 16 had varying degrees of suspicion, and 13 were entirely normal clinically.

In the entire series 57 new, previously undiagnosed, cancers were found by screening 10,941 women, or an incidence of 1 in 200. When we add the patients sent to us for treatment after an initial diagnosis of cancer elsewhere, the total incidence of cancer in our cytologic material becomes 1.1 per cent (119 cancers in 11,031 women). Of the 57 "new" cancers found, 28 were completely unsuspected before our cytologic studies. This represents one entirely silent and invisible cancer in every 400 women screened, and is ample justification for continuing and expanding cytological screening of apparently normal women.

#### COMMENT

With continuing experience and study, particularly of correlations between cytologic smears and histologic material in every instance, it seems to us that the goal of the cytologist is to perfect the interpretation of smears to the degree that no potentially dangerous lesion is overlooked, but to be sufficiently critical to prevent unnecessary surgical conization of the cervix save in very exceptional circumstances. If one undergrades the smear, the first danger befalls the patient; if he overgrades, the second hazard awaits her. It must be emphasized that a certain lack of haste in handling the problem of the atypical smear may be of great value, and the simple repetition of smears often will clarify the situation without in any way endangering the patient. We are well aware of the alarming effect that the report of an atypical smear may have upon both physician and patient. But if the physician is aware of the real significance of the inconclusive smear (in the absence of an obvious clinical lesion), no emergency exists, and he should be able to delay surgical intervention until the situation is clarified.

Comparison of the present series with our earlier one shows an impressive similarity in the combined incidence of CLASS IV and V smears—1.2 per cent in the present group and 1.4 per cent in the earlier. But there is an equally impressive difference in the incidence of CLASS III smears. For instance, the previous tendency to make rather liberal use of the epithet "atypical-suspicious" would have tagged with the CLASS III label about 240 women per ten thousand screened. Now, however, we seem to have been able to reduce the inconclusive group to only about 60 per ten thousand patients. By so doing, we presume that an appreciable amount of mental

**TABLE 3.—Comparison of two laboratories with respect to numbers of women requiring surgical diagnostic procedures to demonstrate cancer, and number of cancers found in a theoretical population of 10,000 women**

	San Francisco Series	Palo Alto Series
No. of CLASS IV and V smears....	140 (1.4%)	120 (1.2%)
No. cancers among IV and V smears .....	92 (66% of 140)	103 (86% of 120)
No. of CLASS III smears.....	240 (2.4%)	60 (0.6%)
No. of cancers among III smears .....	19 (8% of 240)	8 (13% of 60)
Total women needing surgical investigation .....	380 (140+240)	180 (120+60)
Total number of cancers ultimately demonstrated in all three classes .....	111 (92+19)	111 (103+8)

anguish for both patients and physicians has been avoided, and certainly appreciable numbers of patients are being spared the obvious risks and costs of excising relatively normal cervical tissue. Yet, as shown in Table 3, application of the incidence percentages to a theoretical population of 10,000 women indicates that both laboratories would have detected an identical number of cancers. But in so doing, the earlier philosophy of a high index of suspicion<sup>3</sup> would have involved an additional 200 women in unnecessary surgical investigative procedures.

We wish to point out again the apparent value of obtaining serial smears even in the face of an initial reading of CLASS IV. Undoubtedly some of the 12 women who were subjected to conization after only a single smear examination, and in whom cancer was not found, could have escaped the operation if additional cytologic material had been examined leisurely and if confusing inflammatory lesions had been treated conservatively for a reasonable time. Trichomoniasis continues to plague the cytologist.

Lastly, we should like to stress the helpfulness of equating CLASS III simply with inconclusiveness rather than with the concept of suspicion of malignant change. The word "inconclusive" suggests there may be merely technical difficulties in the way of a firm commitment for or against cancer, and we believe it is much simpler to approach the patient on this basis for additional diagnostic material. It avoids embarrassment for the physician who may otherwise be forced to explain immediately to the patient what degree of "badness" is suggested by the Roman numeral III. And it avoids embarrassment for the cytologist who feels that the available evidence is neither strong enough to support the diagnosis of cancer nor sufficiently unimpressive to permit casting it onto the negative pile. It allows

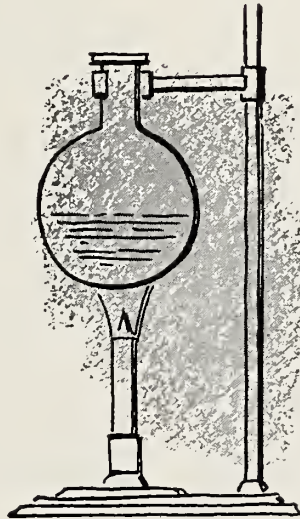
ample time for consultation between clinician and cytologist, and in the vast majority of instances some resolution of the dilemma can be arrived at calmly and in a reasonable time. This is one situation where haste truly makes waste.

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# Hypothermia in Cerebral Resuscitation

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THE VULNERABILITY of the brain to injury from physical trauma and acute oxygen starvation is a major limiting factor in the medical and surgical management of intracranial vascular disease, intracranial injury by impact and extracranial cardiovascular disease.

Improved survival and morbidity rates from cerebral injury are largely dependent upon prevention, early recognition and skillful management of concurrent extracranial and intracranial complications.<sup>13</sup> There is no universally accepted method of treating the injured brain. The reasons are manifold but can be classified into two basic categories: (1) Classic concepts of brain injury mechanisms; and (2) the inability to identify and control the variables responsible for the functional survival or death of injured central nervous system tissue in experimental and clinical circumstances. The latter is particularly true in clinical experience, where the primary yardstick available is the neurologic examination, which permits precise estimates of central nervous system function but seldom provides information on the status of the non-functioning tissue with regard to its potential for recovery.

In order to consider any effective treatment of the brain following injury, we must first assume that the cerebral tissue undergoes a series of adverse intrinsic changes which the injury has initiated or catalyzed and that the magnitude of the initial injury alone is not the sole factor in the final fate of the tissue. It is the purpose of this review to assess that hypothesis on the basis of existing data on laboratory and clinical experience and relate these observations to the alterations produced during induced hypothermia, a therapeutic method of some promise but well justified dispute at present.

## Morphologic and Physiologic

A study of the chronological development of edema, alteration of blood brain barrier, and alteration in tissue elements following local injury to cat cortex was reported by Klatzo, Piraux and Laskow-

• A correlative review of experimental and clinical brain injury was undertaken for the purpose of assessing the therapeutic value of the delayed application of hypothermia in the management of cerebral injury. For any post-injury treatment to be possible, it must be assumed that there is a progressive intrinsic adverse response of the brain to injury for some hours after the actual injury.

The value of any therapeutic effort in treating the injured brain remains to be proven, although there is considerable theoretical and indirect clinical evidence to suggest that hypothermia may be a potent tool. Study should be directed toward a clinically applicable technique which would provide means of distinguishing between reversible and irreversible interruption of cerebral function.

ski.<sup>12</sup> The report provided a detailed description of comparative structural changes at the time of local injury, then at 6, 12, 24, 48 and 72 hours following injury. The investigators observed the development of edema within six hours with progressive increase up to 48 hours, a progressive breakdown of the blood brain barrier for sodium fluorescein up to 24 hours, an astrocytic response after six hours, and an appreciable increase in total proteins (albumin) in the area during this time.

Meyer<sup>18</sup> noted that following segmental cerebral arterial interruption there was progressive increase for many days in collateral blood flow to the anemic segment. Infarction appears to result primarily from damage to vascular endothelium with resulting edema, hemoconcentration, sludging and stasis. What determines whether infarction occurs is the ability of the collateral flow to provide oxygen and other ingredients necessary to support the energy requirements of the tissue to prevent necrosis. A study of the circulatory changes following occlusion of the middle cerebral artery and their relation to function demonstrated that a gradient exists between the degree of ischemia responsible for irreversible infarction and that which results in temporary cessation of function.<sup>18</sup> Results of clinical examination of the nervous system can merely indicate the extent of failure of function; they provide no direct means to distinguish reversible from irreversible states.

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## Chemical

When the rate of energy expenditure exceeds the capacity provided by oxidative processes, a considerable portion of the energy supplied anaerobically depends on the "lactic acid mechanism."<sup>21</sup> It is therefore of considerable interest to review briefly some of the chemical changes that have been observed in cerebral injury and anoxia. Stone and coworkers<sup>26</sup> observed a significant rise in brain lactic acid following cerebral anoxia and local injury. Further study by Gurdjian and coworkers<sup>9</sup> revealed that a rise in cerebral lactic acid occurred when the arterial oxygen saturation fell below 55 to 65 per cent and the oxygen content in cerebral venous blood was below 28 to 43 per cent. During this time, brain lactic acid levels were independent of blood lactic acid levels.

It has also been noted that cerebral lactic acid subsides rapidly upon restoration of circulation or oxygen to the tissue. Although precise chronologic studies are not available, it appears that a steady state is reached in less than 30 minutes after the injury or reduction of cerebral oxygen. Meyer<sup>19</sup> studied the effects of occlusion of the superior vena cava, carotid artery, total aortic arch and middle cerebral artery, and reported that following occlusion there is an increase in brain carbon dioxide, a reduction in oxygen and a fall in pH to acid levels. How long it took for infarction to occur depended on the degree of ischemic anoxia; if anoxia was severe, infarction occurred within 45 minutes.

It is reasonable to conclude, from the physiologic studies, that prolonged cerebral anoxia, hypoglycemia or profound direct local injury results in a steady state in which the cerebral tissue is electrically silent and nutrient material delivered to the tissue is not metabolized. However, these studies do not as yet provide us with an end point which can be related to clinical situations.

The response of an animal, including man, to the application of cold is a general one. A number of physiological changes have been studied and the observations indicate a striking relationship to the mechanisms involved in cerebral injury. During hypothermia the blood does not coagulate as readily as in the normothermic state. Crowell<sup>3,4,5</sup> was able to prolong survival time in dogs with ischemic anoxia by heparinizing and using fibrinolytic agents. Since hypothermia has somewhat the same effect as those agents, it might help in reducing cerebral damage from circulatory stores.

Hyperglycemia has been observed quite consistently during hypothermia.<sup>2,8,16,27</sup> In the absence of hypothermia, decreased tolerance to anoxia and hypoxia has been observed as a result of hypoglycemia.<sup>11,25</sup> Increased tolerance to anoxia has been

demonstrated with hyperglycemia<sup>11,24</sup> in young animals. Prolongation of survival time has been demonstrated in adult rats under hypoxic conditions in the presence of hyperglycemia.<sup>2</sup> The energy necessary to support metabolism in the brain under anaerobic circumstances originates from the glucose in the blood stream and the small intrinsic glycogen stores within the brain.<sup>10</sup> These data would suggest that in hypothermic states the additional amount of glucose in the blood available to the brain may have some beneficial effect.

Egdahl, Nelson and Hume<sup>7</sup> studied adrenal cortical function in hypothermia and concluded that in dogs hypothermia is accompanied by a pronounced depression of adrenal cortical secretion, as measured by the output of 17-hydroxy corticosteroids, and that the secretion of adrenocorticotropin (ACTH) is also decidedly depressed in hypothermia. There is considerable reason to believe that some of the effects of the general adaptation syndrome, such as water and sodium retention, edema formation and perivascular leukocyte infiltration are, in part, under endocrine control. Therefore, suppression by hypothermia of the pituitary adrenal system after acute injury may have a beneficial effect.

Laskowski and coworkers<sup>15</sup> studied the effects of hypothermia, utilizing the same elapsed time morphologic techniques cited earlier. They demonstrated in animal experiments that if the local cerebral injury was produced while the body temperature was 26 to 28° C the degree of edema was decidedly less pronounced at all intervals of examination, and that peak reaction occurred 48 hours after the injury. Control animals, normothermic, showed a much greater reaction, which seemed to peak within 24 hours. When hypothermia was initiated six hours after the injury and was maintained at 26° C for 42 hours, the degree of reaction was comparable to the changes observed after six hours in the controls. Rosomoff<sup>23</sup> demonstrated that, in dogs, protection against infarction by hypothermia is feasible only if initiated within 15 minutes after vascular occlusion and if a temperature of 24° C is reached within 90 minutes of infarction.

During hypothermia below 33° C, arterial ischemia does not result in a falling pH to the extent that it does in normothermia.<sup>20</sup> So far as could be determined, the influence on pH of induced hypothermia after injury has not been studied.

Recent discussions have stressed the relative effects of hypothermia and hypertonic urea on various factors in intracranial dynamics. In any consideration of this sort, it should be stressed that direct surgical observations are often not valid for the simple reason that the head is open. Likewise, cerebrospinal fluid pressure cannot be reliably correlated

with changes of a single intracranial component. Rosomoff's<sup>22</sup> recent study comparing the effects of urea and hypothermia on the volume of the intracranial contents—blood, cerebrospinal fluid, brain solids and brain water—revealed that at 25° C there was a shift of brain water to cerebrospinal fluid and that with urea alone, in a dose of 6 gm per kilogram of body weight, the brain water volume was reduced commensurate with an increase in the cerebrospinal fluid volume and intracranial blood volume.

Perhaps if this type of study were performed following ischemic or traumatic injury at various time intervals—6, 12, 24, 48 and 72 hours—we may be able to add further rationale to therapy.

The demonstration by Adams<sup>1</sup> of an active anaerobic metabolism during cerebral arterial occlusion remains to be correlated with the general understanding of the injury mechanism.

My coworkers and I in our experience with over 75 patients with cerebral injury treated with hypothermia, learned very little about the actual value of hypothermia in treating cerebral injury, primarily because of our inability to provide ourselves with adequate control experience. We concluded, however, that a requisite to validity in such a study is control of the body temperature of the non-hypothermic group within a normal range. For example, almost all our patients with a cerebral injury of sufficient severity to enter the study group had an average daily temperature of 102° F, and our comparisons in many instances were of hypothermia with hyperthermia. We also noted that therapeutic temperatures must be reached in less than six hours following injury. This has imposed many practical limitations upon our methods, in that frequently the patient does not come into our care until three hours or more from the time of injury, and that with immersion techniques induction of hypothermia to the therapeutic range frequently takes from an hour and a half to three hours.

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# Community Mental Health Services Act

## Five Years of Operation Under the California Law

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DURING THE CURRENT YEAR more than 30,000 people will be served in direct patient services provided in their own community under the Short-Doyle Act; and countless others will receive aid through the indirect services of psychiatric consultation and mental health education that are a part of the local city and county programs that have been set up in the five years since the Act was passed by the state legislature.

Three-fourths of the people of California live in cities and counties that now have Short-Doyle programs, and in many areas that do not have them study groups of citizens and local officials are planning to put such programs into effect.

In the period since the Act was passed, in addition to the growth of these publicly supported services, there has been a phenomenal growth in private psychiatric care. The number of psychiatrists in private practice increased from about 800 in 1957 to more than 1,100 at present. In addition, there has been an increase in the number of private psychiatric inpatient facilities and in insurance coverage for psychiatric illness. The present report, however, will concern itself primarily with the development of facilities financed under the Short-Doyle Act.

### The Short-Doyle Act

In specifying the nature of reimbursable programs, the Legislature stated that direct patient care could be provided through psychiatric outpatient clinics, inpatient units or rehabilitation facilities. Indirect services of a preventive nature could be offered through mental health education or psychiatric consultation. Local government could elect to provide all five services, but had to provide at least two.

Medical direction was assured through the requirement that the administrator would have to be a health officer, a medical director of a county hospital, or a psychiatrist. In addition, three of the seven members of the local mental health advisory board were required to be practicing physicians.

Care of patients under the program was limited to those unable to obtain private psychiatric care. The California Medical Association was active in

• The Short-Doyle program represents a small part of the needed response to the base problem of mental illness. However, in the five years since the signing of the original bill, programs receiving aid under the Short-Doyle Act for Community Mental Health Services have made impressive steps toward meeting the need for community mental health services. They have done so under local auspices and working closely with general health and medical programs available locally.

drafting the version of the bill which was finally enacted. This version enjoyed wide legislative and public support. It was seen as an effective aid to development of additional mental health services operated in close relationship with local health services.

### Outpatient Care

Thus far in the history of the Short-Doyle Act, outpatient psychiatric clinics have dealt with the greatest number of patients served by local programs. For the most part, these patients have been seen in new or expanded facilities. It would seem appropriate therefore to examine the total growth of nonprofit outpatient psychiatric services in California.

In 1956-57 there were approximately 240 full-time positions for psychiatrists, psychologists and psychiatric social workers in all non-profit (including government sponsored) outpatient psychiatric clinics reporting to the Department of Mental Hygiene.\* This number rose to 455 in 1961-62. The statewide rate of full-time professional clinic positions per population increased from 17.0 per million in 1957 to 26.4 per million in 1962. Throughout the period under consideration, the availability of psychiatric clinic manpower has been greater in Los Angeles County than in the rest of the state. The Los Angeles County rate rose from 21.2 per million in 1957 to 33.6 per million in 1962. For the rest of the state the rate was 14.2 per million in 1957; in 1962 it was 22.2.

\*Community outpatient psychiatric clinics in California report voluntarily to the State Department of Mental Hygiene in response to an annual questionnaire concerning clinic manpower. State-operated clinics and clinics receiving state aid all report; almost all other psychiatric clinics also report.

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Submitted March 1, 1963.



*Inpatients Discharged from State-Local Mental Health Services*

	San Francisco		Los Angeles		San Mateo		Contra Costa		San Joaquin	
	1959-1960	1960-1961	1959-1960	1960-1961	1959-1960	1960-1961	1959-1960	1960-1961	1959-1960	1960-1961
Number of patients.....	1,702	1,516	817	1,570	1,596	1,434	486	673	211	228
Per cent receiving definitive treatment.....	14.0	19.8	36.6	44.3	82.0	72.1	89.7	68.9	92.9	97.1
Per cent recommended to state hospitals....	40.2	36.8	31.3	26.8	22.7	22.9	21.6	24.7	12.8	5.7
Per cent improved.....	48.1	50.7	55.8	59.2	59.0	53.4	65.8	46.1	79.1	81.6

Until the Short-Doyle Act was passed, there was little local public outpatient psychiatric care. In 1957 there were only four county-operated outpatient psychiatric clinics, and they had limited staffs. The greatest growth of all low-cost outpatient psychiatric services in the past five years has occurred in clinics which received reimbursement through the Short-Doyle Act. The number of patients admitted to these state-aided clinics rose from 4,728 in 1958-59 (the first full year of operation) to 15,259 in 1961-62. At present there are 41 clinics receiving reimbursement under the Short-Doyle Act. Twenty-four are located in general hospitals, four in public health centers and 13 in separate facilities.

Along with the growth of public facilities through the Short-Doyle Act, services of non-profit non-governmental community outpatient psychiatric clinics have increased both by expansion in existing clinics and by establishment of new clinics. Some independently administered psychiatric clinics now contract with Short-Doyle programs and receive reimbursement for part of their caseload from this source. However, the growth in non-profit, non-governmental clinics was not limited to those developing contracts with local Short-Doyle programs.

The state mental hygiene clinics and the outpatient services of The Langley Porter Neuropsychiatric Institute at University of California Medical Center in San Francisco and the Neuropsychiatric Institute at the University of California at Los Angeles have increased their manpower, but the rate of increase has not exceeded the rate of growth of the state population. In fact, the state clinic manpower decreased from 5.6 per million state population to 5.3 per million.

#### **Inpatient Care**

The second most actively used type of patient service for which reimbursement is received under the Short-Doyle Act is short-term hospitalization in psychiatric wards of general hospitals. At present reimbursement for the care of patients of this order is limited to those admitted to psychiatric wards of county hospitals. Three counties that are offering inpatient services under the Short-Doyle Act have added psychiatric beds since the legislation was enacted. Two counties, Santa Cruz and San Joaquin,

developed psychiatric units where none existed. Santa Cruz now has 18 beds and San Joaquin 22 beds. San Diego County increased its bed capacity from 38 to 100, although this occurred before there was a Short-Doyle program there.

Contra Costa, Los Angeles, San Francisco and San Mateo counties now have essentially the same number of beds that they had in 1958. In these counties the effect of the Short-Doyle Act was felt through improved staffing and more treatment of patients, as opposed to diagnosis only. In general, until the introduction of the Short-Doyle Act there was little definitive psychiatric care given in county hospitals. During the first full year after the Act was passed (1958-1959), there were slightly fewer than a thousand patients receiving definitive treatment in psychiatric wards of county hospitals operating under the Short-Doyle program. In the current fiscal year (1962-63) there will be over 3,500 patients receiving psychiatric treatment in the psychiatric wards of county general hospitals operating under the Short-Doyle program.

The effect of adding definitive psychiatric services over and above general hospital care and of patient observation ("screening") as a means of further reducing the numbers going to state hospitals is shown in the table above. For two fiscal years the percentage of patients receiving definitive treatment has been compared with the percentage referred to a state hospital at discharge. Patients receiving definitive treatment are much less likely to be referred to a state hospital at discharge than those receiving no psychiatric treatment. Also shown is the per cent improved between admission and discharge. In all instances, the higher the proportion treated, the higher the proportion considered improved.\*

#### **Psychiatric Rehabilitation Services**

Psychiatric rehabilitation services are defined as those that are provided under psychiatric direction and that are primarily concerned with alleviating

\*The reader should be cautioned that the nature of patients reported to the Department in this series varies somewhat. San Francisco, Los Angeles, and Contra Costa reported only on patients who had a voluntary status at some time during their stay. Other patients were hospitalized in these counties, but they were not reported to the department. From San Mateo, reports were received on all patients. From San Joaquin, reports were received on all patients; however, San Joaquin accepts only voluntary patients.

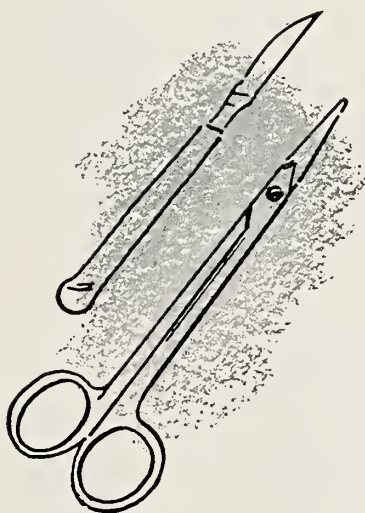
the residual effects of psychiatric illnesses. Services so designated under the Short-Doyle program include an alcoholic clinic, a day treatment center, a "half-way house" where former state hospital patients are helped to readjust to everyday living, a social therapy group and a sheltered workshop for the mentally retarded. The number of patients served by programs of this type has remained relatively constant since the first year of operation of the Short-Doyle Act, although the programs themselves have changed. In the current year there are approximately two thousand patients receiving such care.

#### Indirect Services

The indirect services of mental health education and psychiatric consultation have developed signifi-

cantly under the Short-Doyle Act. In the first year of operation under the program (1958-59) there were approximately 16,000 man-hours invested in these services, compared with 30,000 in the current year. In the main, these services were provided to persons—like physicians, teachers, clergymen and the police—who have a professional responsibility, other than psychiatric, for the welfare of individuals in the community. The two largest recipients of such services are medical groups and schools. Most of the education which is offered is given on a face-to-face basis, much of it consisting of inservice training for the recipient group.

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# Treatment of Hyperlipemic Diabetic Patients

## Effects of Dextro-Thyroxine Therapy

R. L. SEARCY, Ph.D., R. G. CRAIG, M.D.,  
J. A. GIDDINGS, M.A., and L. M. BERGQUIST, M.S., Los Angeles

MANY DRUGS used to lower serum lipids in healthy subjects may not be well tolerated by patients with diabetes mellitus. Nicotinic acid, for example, has been found to depress glucose tolerance.<sup>4</sup> Sitosterol, linoleic acid and oral heparin appear less effective for depressing serum lipids in diabetic than in non-diabetic subjects.<sup>3</sup> By contrast, Starr<sup>7</sup> reported that dextro-thyroxine produced greater cholesterol-openic responses in diabetic patients than in others. However, a preliminary report of Cochran and Marbach<sup>2</sup> indicated that the thyroid isomer provokes hyperglycemia and often ketonuria in some insulin-treated subjects. In order to further evaluate the efficacy of dextro-thyroxine therapy, clinical and biochemical responses to the drug were studied in a group of hyperlipemic diabetic patients.

### MATERIALS AND METHODS

The study group included 12 moderately well-controlled diabetic outpatients receiving insulin or oral hypoglycemic agents. They were given oral doses of 2 to 8 mg of dextro-thyroxine daily for 8 to 46 weeks. Blood was collected before dextro-thyroxine therapy was begun, and biweekly thereafter. At each patient visit diabetic status was evaluated clinically as well as in terms of glucose and ketone-body levels of blood and urine.

Lipoproteins of density less than 1.063 gm per ml were measured as columns of immunoprecipitate centrifugally sedimented in uniform-bore microcapillary tubes.<sup>1</sup> Determinations made in this manner compare favorably with ultracentrifugal estimation of lipoproteins S<sub>1</sub> 0-400.<sup>5</sup>

Following determination of immunoprecipitate levels, serum-antiserum supernatants contained in the microcapillary tubes were transferred to filter paper segments and dried. Aliquots of patient serum and antiserum were also dried on filter papers. Cholesterol estimations were then performed on the

• Serum low-density lipoproteins of 12 hyperlipemic diabetic patients were lowered, in some cases to normal values, by administration of dextro-thyroxine. Accompanying reductions in serum total cholesterol were largely reflected in the low-density lipoprotein fraction. By contrast, high-density lipoprotein cholesterol concentrations remained relatively unchanged. Diabetic control by insulin or oral hypoglycemic agents was not detectably altered by dextro-thyroxine therapy for periods of 8 to 46 weeks. Therefore, use of the drug for treatment of diabetic hyperlipemia would appear to merit further investigation.

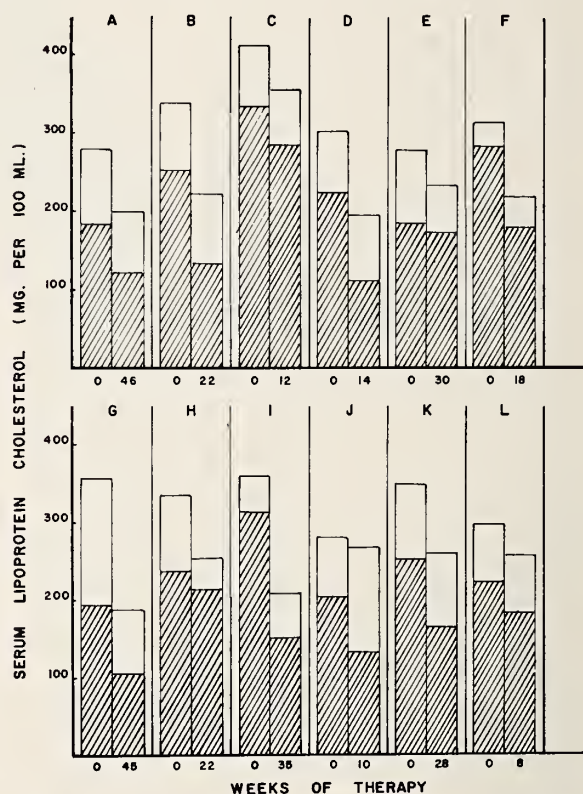


Chart 1.—Effects of dextro-thyroxine on serum high-density (clear blocks) and low-density (hatched blocks) lipoprotein cholesterol levels of diabetic patients. Each letter at top of column represents a patient.

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specimens according to a technique described previously.<sup>6</sup> Values thus obtained were used to calculate cholesterol contents of high-density and low-density lipoprotein fractions.

#### RESULTS AND DISCUSSION

Before receiving dextro-thyroxine, the range of serum total cholesterol concentrations in the study group was from 278 to 413 mg per 100 ml (mean 326 mg). After 8 to 46 weeks of therapy, the range of serum total cholesterol levels was 183 to 358 mg per 100 ml (mean 241). The most striking cholesterol reduction in the group amounted to 169 mg per 100 ml. The response was observed after 46 weeks of dextro-thyroxine therapy in a patient with a base line serum total cholesterol level of 357 mg per 100 ml.

Distributions of cholesterol between high-density and low-density lipoproteins appeared abnormal in diabetic patients as compared with healthy subjects of corresponding age. Before the patients received the drug, abnormally large proportions of serum total cholesterol were associated with low-density lipoprotein fractions (Chart 1). After dextro-thyroxine administration, however, reductions in serum total cholesterol were largely confined to

lipid-bearing proteins of the low-density spectrum. On the other hand, high-density lipoprotein cholesterol concentrations before and after treatment were similar, averaging 77 and 75 mg per 100 ml, respectively. Hence, ratios of low-density to high-density lipoprotein cholesterol were reduced by dextro-thyroxine therapy.

Previous evaluations of low-density immunoprecipitate levels of 640 clinically healthy males and females yielded a mean and standard deviation of  $2.8 \pm 0.6$  mm.<sup>5</sup> Therefore, pre-treatment immunoprecipitate levels of a majority of the study group may be considered elevated (Chart 2). Many subjects, while receiving dextro-thyroxine, had progressive diminution in serum low-density lipoproteins, the amounts approaching normal limits. It is noteworthy that there was no apparent tendency for low-density lipoprotein levels to return to pre-treatment levels. Frequently, serum lipid depressions are difficult to maintain for more than a few weeks with levo-isomers of thyroxine.<sup>8</sup>

During 8 to 46 weeks of clinical trial, no changes in insulin or oral hypoglycemic agent requirements could be attributed to dextro-thyroxine treatment. Biweekly measurements of serum and urine glucose and ketone levels suggested that the drug did not discernibly alter diabetic control. These findings

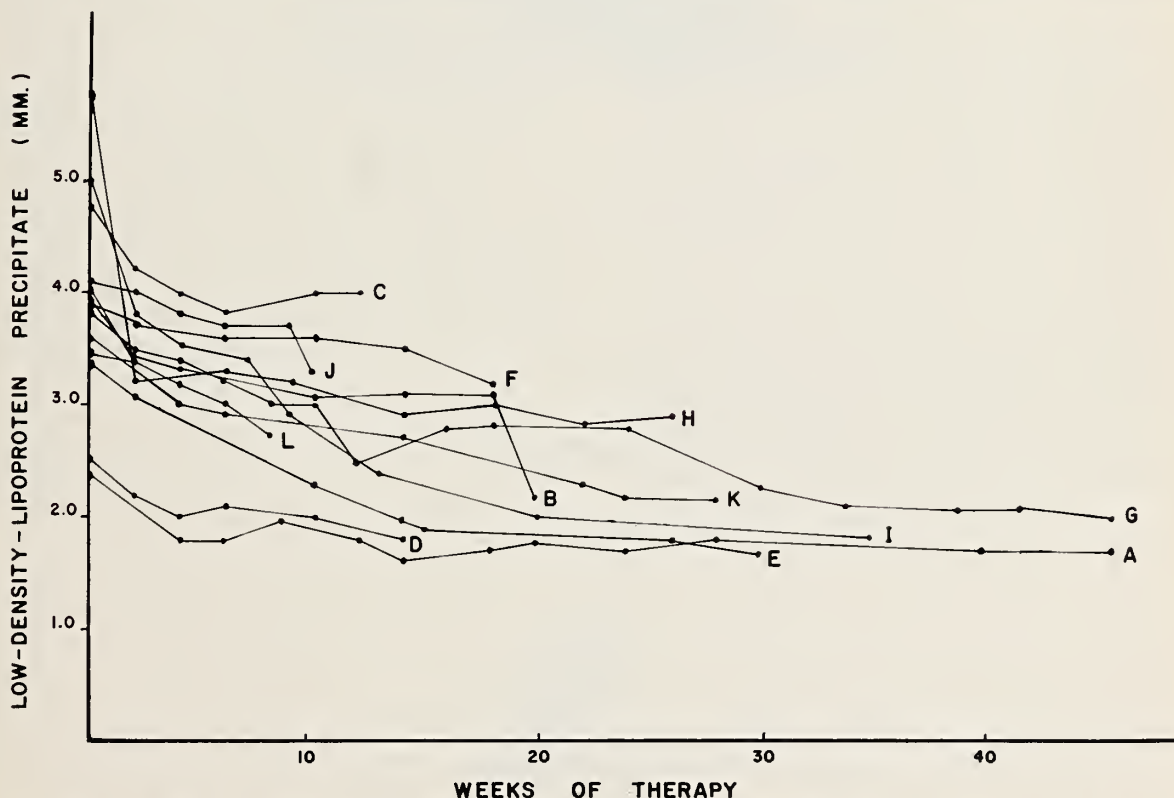


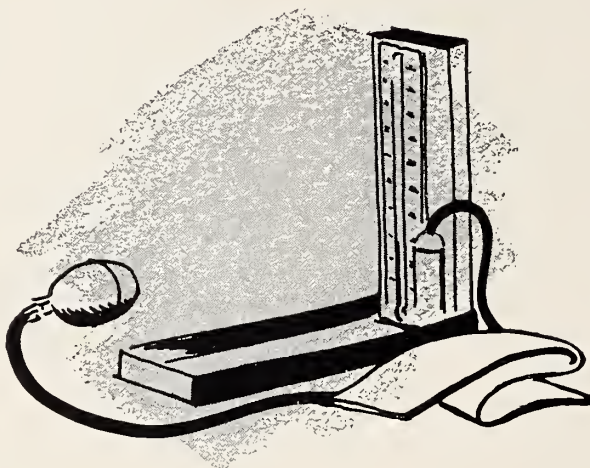
Chart 2.—Effects of dextro-thyroxine administration on serum-low-density-immunoprecipitate levels of diabetic patients. Each charted line represents a patient. The capital letters A through L correspond with those on Chart 1.

are in agreement with those of Starr.<sup>7</sup> However, less favorable responses may be obtained in diabetic patients poorly controlled before administration of dextro-thyroxine.

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# Multiple Sclerosis

## An Evaluation of Tolbutamide in Treatment

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IMPROVEMENT in symptoms and signs in seven patients with multiple sclerosis who were treated with tolbutamide (Orinase®) was reported by Sawyer<sup>3</sup> in 1960.

We made a double blind study of the use of the drug in 41 patients with multiple sclerosis of one to thirty years' duration. There were 16 men and 25 women ranging in age from 20 to 60 years. (Table 1.) All were office patients, 25 of them wheelchair-bound. The duration of treatment was from four months to 26 months.

Neither the investigators nor the patients were aware whether it was a placebo or tolbutamide that was being used during the specific periods of study. The average duration of administration of the placebo was 4 months and of the tolbutamide 4 months. During the period when tolbutamide was given the dosage was from 1 to 2 grams a day.

On initial examination the subjective complaints and objective neurological findings were recorded and classified as to severity. Each patient kept a record of any changes in his condition and was examined at monthly intervals.

From the results, as tabulated in Table 2, we concluded that tolbutamide caused occasional subjective improvement, but that this improvement was not sufficient or constant enough to warrant a recommendation for the use of the drug in the treatment of multiple sclerosis. This conclusion agrees with that of other investigators.<sup>1,2</sup>

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Tolbutamide for this study was supplied by courtesy of the Upjohn Company. The study was supported by a grant from the San Diego County Multiple Sclerosis Society.

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TABLE 1.—Data on Patients with Multiple Sclerosis Treated with Tolbutamide

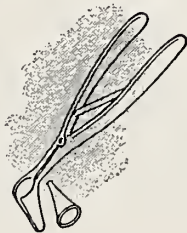
Number of Patients .....	41
Males .....	16
Females .....	25
Age .....	
20-30 .....	3
30-40 .....	12
40-50 .....	15
50-60 .....	11
Duration of Disease .....	
1-3 years .....	5
3-6 years .....	4
6-9 years .....	6
Over 9 years .....	26
Average Duration of Treatment .....	
Placebo .....	4 months
Tolbutamide .....	4 months

TABLE 2.—Results of Tolbutamide Treatment of 41 Patients with Multiple Sclerosis

	Placebo	Tolbutamide
1. Subjective improvement .....	3	9
2. Objective neurological improvement ....	1	1
3. No improvement .....	37	31

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# Psychological Aspects of Pain in Patients with Terminal Cancer

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THE OLD RIGID division of pain into organic pain and functional pain is falling away. In its place we have what Sasz<sup>8</sup> has called the two components of pain. One is the medical portion which involves the physical disturbance in an organ of the body and the transmission of an impulse to the central nervous system saying that something is wrong. The other component is the communicative aspect of the pain and has to do with the cry for help to another person.

This second component may then have complex elaborations depending upon the personality and past history of the person involved. And the medical component, of course, will have many variations depending on the stage and type of disease involved. The important point to emphasize is that both components will always be present simultaneously in varying combinations.

Few psychiatrists or psychologists have studied the dying patient but those who have report that there is no revolutionary change in the patient's characteristic pattern of behavior at the threat of death. However, what is seen is an intensification of the person's usual methods of dealing with stress. In other words, if it has been a man's lifelong pattern to regress, feel helpless, be childishly demanding in the face of stress, then this will be his pattern in the terminal situation too. If he has always dealt with threats by a denial and a stoicism, then this will tend to be his pattern still. It is this observation which justifies our applying certain conclusions about psychogenic pain in other situations to the terminal cancer patient.

I would like to cite some examples of the ways in which psychologic and emotional factors shape the expression of pain in general, then apply these models to the specific situation in the cancer patient in the terminal state, ending with some remarks about treatment.

A schizophrenic patient whose perception of the outside world is so disturbed that he believes that people are plotting against him when such is not the case may also have so distorted an impression of his inner world—his body—that his descriptions of what he may call pain are quite bizarre and

• The dying patient reacts emotionally to the problems encountered in the terminal period according to his established pattern of response to stress. The nature of this pattern will play a part in his experience of pain. Some of the types of reaction include the bizarre misinterpretation of bodily sensation of the psychotic, the development of conversion symptoms, the increase in pain through muscle tension in the anxious but overcontrolled person, and the stoical acceptance by guilt-ridden patients.

Physicians are sometimes reluctant to devote full attention to the care of the terminally ill for a number of reasons, including the attitude that "curing" is the only worthwhile activity of a doctor of medicine.

Observers have found that the physician's attention to the day to day anxieties of the patient in a terminal stage may contribute substantially to his comfort.

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puzzling. He may speak of his organs rotting or of his stomach being dead.

Such a patient experiences and expresses consciously what the rest of us may feel unconsciously. For instance, the image of cancer as a living thing which eats one from the inside is universal. Indeed the word cancer means crab. One may say that this is in fact what cancer is, but there is quite a difference between the vivid image of a live animal actually biting and consuming our bodies and the medical picture of disordered cell growth. It is just such unconscious psychological images which may contribute to the psychologic component of pain in the patient with terminal cancer.

An example of the way psychological image can grossly affect the expression of pain is given by Kolb.<sup>7</sup> He described a 14-year-old boy who had his right leg amputated. Immediately following the amputation he complained bitterly of a burning pain and writhed constantly in bed, crying out for help. No drug treatment could relieve this pain. When the psychiatrist came to see him he asked the boy about the existence of phantom limb sensation. The boy replied that he had such a feeling and then told a story which he recalled hearing at school. The story related that a man who had an amputation continued to have pain afterward. When nothing could be found to relieve him, the man's amputated ex-

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Submitted January 24, 1963.

tremity was disinterred—so the story went—and it was discovered that ants were eating the limb. When the boy was asked what he thought was being done with his own limb, he replied that he thought it was probably being burned. After he was told that his leg was not being burned the severe pain subsided to a large extent. The conclusion may be drawn that this boy's unrealistic fantasy played some role in the cause of his pain.

This psychological mechanism is called conversion because a symbolic idea (in this case the limb being burned) is converted into a bodily sensation. The phenomenon of conversion may well take place also in the patient with terminal cancer and be stimulated both by the presence of a diseased organ and by fear of death. It is easy to see, for instance, how this image of a part of the body burning could represent for the dying patient his fears of eternal punishment after death.

Another mechanism which is often involved in pain is the pain from muscle tension. It is obvious that a patient with terminal cancer may be particularly liable to such pain when he braces himself for the pain he experiences, when he braces himself for visits by relatives with whom there may be conflicting feelings or when he struggles with his feelings about approaching death.

As mentioned at the beginning, there is an element in pain which has to do with communication with other people. Thus the conversion symptom of pain not only serves a purpose within the psyche of the patient but it also serves a purpose in his relationship with others. For instance, a conversion symptom of pain may not only express the idea of self-punishment for a sense of unconscious guilt but it may also express the idea to a loved one, "See how much I'm suffering!" Such pain may also express the idea, "Help me," and may simply be a call for some attention which the patient needs greatly but cannot ask for in any other way.

With these general considerations in mind, let us look at the specific problems of the patient with terminal cancer. For our purposes we will define terminal as the final stage at which nursing care is necessary. Such a patient is confronted with at least three kinds of stress—an increasing degree of helplessness, pain and, in one degree or another, a knowledge of approaching death. The individual patient's reaction to these stresses then will be according to his established pattern.

In our society the virtues of self-reliance and independence are so highly valued that many people feel a great deal of shame and humiliation at the idea of having to be taken care of. This may lead to such tension that pain may be intensified by the consequent increased muscle tension. It is also possible that conflict over this dependency may lead

to a demand that the physician get him well. This demand may be expressed through an increase in the intensity of the pain as a way of saying, "Do something to get me well." It is also possible that a patient feels such a sense of guilt about the need to depend on others that his pain becomes a method of self-punishment and also a way of saying to himself, "Look—I'm justified in having to depend on others because I'm suffering so much."

At the other extreme some patients may have developed the kind of personality which accepts and embraces a sense of helplessness at any stressful situations they meet. Such people as this may be very passive in their attitudes, seldom complaining aggressively of pain, but always stating in response to questioning that they are having pain, although showing no facial or other expression to indicate that this is the case.

Physicians and nurses who themselves are children of our culture, tend to like the stoical patient because he makes fewer open demands upon them. However, I think one must take a second look at the uncomplaining patient who insists on doing all he can for himself. I think that in so doing we may find that his emotional needs may be finding some other expression which may require our attention.

With regard to the stress of experiencing physical pain, the pattern of reaction may be one in which the pain is quietly accepted as his due punishment by a guilt-ridden patient who has felt all his life an unconscious need to atone for imagined crimes. Or it may be a realistic, forceful expression of discomfort by a relatively well integrated person. Or it may be a whining, tearful, dramatic plea from a person whose personality pattern has remained at a childhood level.

The physical pain may also become a part of a neurotic conflict. For example, a study by Fine-singer and Abrams<sup>1</sup> (to be discussed later) describes patients with cancer who had the idea that their malignant lesions were in some way the result of venereal disease. This expresses a continuing sense of guilt about venereal disease and continuing neurotic conflict about past sexual activities. If such patients also have pain from cancer involving the reproductive system, the pain may then be intensified by its involvement in this conflict.

The stress involved in the knowledge or the half-knowledge or the suspicion that death is near is difficult to study and evaluate. Feiffel,<sup>5,6</sup> a psychologist who made research studies involving the interviewing of patients in a terminal state, reported that he had great difficulty in getting the cooperation of hospitals and physicians, and he attributed their resistance to the general abhorrence of the subject of death in our culture. Many observers have commented on the American supreme effort to deny the



reality of death. The use of euphemisms such as "passed away" and "departed," the expectation that bereaved persons will keep their grief to themselves, and the use of such a word as "foreverness" all indicate the abhorrence we feel for this inevitable reality of life. Since it seems to all of us so natural to dread and hate death, it is difficult for us to examine the factors that go into what we accept as the "natural" fear of death. For some it may mean the horror of eternal, painful punishment. I do not mean just those people whose conscious adult religious belief is in a literal hell. The same notion may be present unconsciously in someone who consciously would express profound skepticism about such a belief. This unconscious concept may be the result of long and deeply repressed ideas from childhood.

For others, death may mean a horror of the unknown, and some may fear that the process of dying in itself will be an agony. The idea of loss of one's self motivation may be dreadful to some persons, while for others the leaving of loved ones is paramount. Still others may look upon death as an enticing dream of eternal peace in which one may be reunited with persons he loved who died. And death may mean all these things and others to one and the same person.

Granted that these and many other fears may be involved when a patient reaches a terminal stage of illness, what bearing may this have on his pain? The commonest form that the attempt to deal with all these fears takes is denial. That is, the mind simply says, "It isn't so that I'm going to die." This phenomenon is the same that takes place in combat when the infantryman says to himself, "It won't be I who gets hit." And it is the same as that which occurs when one has lost a loved one and at first feels no sense of loss. There are degrees of denial. That is, some patients may simply never admit that they are going to die, while others may at one time seem to understand perfectly well what is happening and make plans accordingly, and then, a short time later, behave as if they were planning to live on. It is as if the mind were able to tolerate only for short periods this idea of death. Most investigators who have written about psychological aspects of dying—Eissler<sup>3</sup> for example—feel that for most patients some degree of denial is desirable and should be encouraged by the physician.

Some authors feel that there is an optimum balance between denial and acceptance of the approaching death. One can certainly see that if the denial were too strong it might have a reflection in the patient's experience of pain. At least this is true if it is valid to apply a principle from work with phantom limb pain in amputees. In this group it appears that the persistence of severe phantom limb pain may be associated with a need to deny the loss

of the limb. In such a case the pain is a kind of insistent message saying to the patient, "My limb isn't really gone; how can it be, when it hurts so much?" If we apply this idea to patients with terminal cancer, then we might suspect that too forceful a denial could result in increased pain which is saying, "Look—I'm still alive." In this connection, it is of interest to note that some observers, particularly social workers who have worked with the families of patients who have terminal cancer, have found that the families (and sometimes the hospital staff) may treat the patient as if he were already dead as soon as they find that he is, indeed, in the terminal stage. These observers feel that the communication of this feeling by facial expression, manner and voice may be very deleterious to the morale of the patient. It is understandable that such a situation might set off an episode of increased pain as a way of forcefully letting everyone know that he, the patient, is still around.

Thus, fear, apprehension and despair in the patient and his family may show itself in an increase in the severity of the patient's pain. We should begin our consideration of treatment, then, with the question of what the physician can do to minimize such emotional complications. Immediately we have to look at the attitude of the physician, for it is necessary that he believe that this function in the care of patients with terminal cancer is legitimate, worthwhile and important. Sonkin,<sup>9</sup> in describing the experience at New York Hospital with a home care program, reported that there was wide variation in the approach of physicians to the care of patients in the terminal stages of disease. The idea was openly expressed by one physician that it was a waste of time for a physician to attend a patient "for whom nothing more can be done medically." Such an attitude, although perhaps seldom openly expressed, is, I think, not unusual. It is undoubtedly related to the attitudes which were mentioned by Feiffel<sup>6</sup> when he found so much opposition to working with such patients. The notion that it is the physician's role to cure and that anything less than this just does not count is certainly common.

Many, perhaps most, physicians have been in part motivated in their choice of medicine by an unconscious "rescue fantasy." The famous psychiatrist, Alfred Adler, told in his autobiography of an experience in his early childhood in which he had a serious illness, was near death, and was saved by medical intervention. This experience set his ambition to become a physician and do the same. Such a drive is, of course, constructive and useful to a degree. However, its usefulness is gone when we let it become so rigid that any experience which does not fit into the form of a rescue operation becomes unacceptable. If the physician feels that the inevi-

table fact that the patient will die is a threat to his notion of himself as savior, then he will turn away from these patients in terminal stages and lose an opportunity to be useful.

Assuming that the physician can overcome some of this reluctance to work with such patients, how can he be helpful? First, one can help by a willingness to listen to what the patient or his family may be needing at any given moment. Feifel<sup>5,6</sup> found that, although the medical staff at first objected to permitting interview of patients in terminal stages, once interview was allowed, many of the patients expressed their gratitude for the opportunity to talk about their feelings about death and their current state. Many reported later that they felt relieved and calmer after talking even though the interviewers had seen the patients principally for research purposes and had no therapeutic objectives in mind. The first point, then, is to ask oneself: "Am I hurrying out this patient's room because he is in the terminal state or am I giving full attention to what may be done for him at this point?" Perhaps one hurries out because he does not know how to answer the patient's questions. Of course, what one tells a patient about his illness has to be decided case by case, taking into account the personality of the patient, the realistic needs of his job and family and such factors. However, there are certain general principles which apply to every case. One is that the physician should attempt not to communicate fear, disgust, horror or hopelessness in his manner and attitude. On the other hand he should not assume what is often a transparently false cheerfulness in the face of a grave situation. He should not treat his patient as if he were already dead. He should remember that he does not really know the prognosis for certain.

Everson<sup>4</sup> studied reports of 1,000 cases of spontaneous regression of cancer collected from the world's literature. To date he has irrefutable proof of remission in only 90 cases, but this is enough to validate the essential point that in no case do we *know* the prognosis. I recently had experience with a case in which an x-ray film of the chest one year after a radical operation for cancer was read, first by a radiologist and then by a group of physicians at a staff conference, as showing multiple metastasis. Now, three years later, the thoracic lesions have grown smaller without treatment and are considered to have been some other process. At the time the x-ray film was taken, the decision was made after discussion with the family to tell the patient that there was something in his chest but we did not know what it was. He did not press the point but probably made his own assumption that it was not cancer. We felt we were not telling him the whole

truth when we said we did not know what it was; the fact was, we *were* telling him the truth.

One study of Finesinger and Abrams<sup>1</sup> showed that in a group of cancer patients, including ten who were in a terminal stage, all showed some feelings of guilt about the disease. These feelings came out usually in the patient's attributing the cancer to some past misdeed or failure on his part. This sense of guilt may certainly contribute to the degree of pain since, as we have mentioned, the need for punishment to satisfy unconscious guilt is a common mechanism in psychogenic pain. The physician ought to be alert to indications of this attitude so that he can try to relieve some of the guilt.

Another important way that a physician may contribute to the ease of the patient in a terminal state is in dealing with the fears of the family so that the patient will not be unduly burdened by their emotional reactions. In this task as well as with many practical problems he may call upon the skilled social worker for help.

In connection with the family I would like to conclude with a quotation from a recent article by Ayd<sup>2</sup> on "The Hopeless Patient":

"Doctors are not the only critics of our ministrations to the dying. Lay people who have witnessed an expiring loved one's ordeal prolonged by oxygen, stimulants and tubes inserted into natural and surgically created bodily orifices also are our censors. They resent being deprived of the opportunity to share the waning moments of life with the one they love. For years they have shared joys and heartaches. Why, when they could face the greatest of all crises together must they be shoved out of the room, displaced by gadgets and personnel striving to delay the inevitable?"

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# CASE REPORTS

## Pleural Rubs in Tietze's Syndrome

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THE SYNDROME of nonspecific, nonsuppurative costochondritis was first described by Tietze in 1921. Scattered reports of cases appeared in the English and foreign literature in the next 30 years, but in the past decade many cases have been reported and it is now realized that the disorder is not rare.<sup>2,3</sup> In our experience, nonsuppurative costochondritis is a fairly common cause of anterior chest pain. We recently attended three patients with Tietze's syndrome in whom a pleural rub was present during the acute phase of the attack. As we were unable to find reference to this feature in a review of approximately 200 cases in the literature, the purpose of this paper is to call attention to this unusual clinical manifestation of Tietze's syndrome.

### REPORTS OF CASES

CASE 1. A 26-year-old man was admitted to Palo Alto-Stanford Hospital on June 2, 1960, with complaint of severe left anterior chest pain. Six days previously he had noticed some discomfort in the left arm and left shoulder while lifting heavy boxes. Four days before admission he had some nausea and anorexia. Two days later an aching over the upper sternum developed, and on the day before admission the pain spread to the left upper anterior chest and was aggravated by deep breathing, coughing, rising to a sitting position, twisting movements of the chest and movements of the left arm. These symptoms became progressively worse and the patient, fearing that he might have had a heart attack, sought admission to the hospital. On examination the temperature was normal, the pulse rate 80 per minute and blood pressure 116/70 mm of mercury. There was a visible swelling of the second costochondral junction on the left, but no redness or erythema of the skin. The swollen area was exquisitely tender and pressure on it evoked the pain

of which the patient complained. A loud pleural friction rub was heard over the left upper chest and upper sternal area. This was most pronounced with the patient supine and almost disappeared when he sat upright. An x-ray film of the chest, an electrocardiogram, the hemoglobin content of the blood, leukocyte count and differential, the sedimentation rate and urinalysis were all within normal limits. With the application of heat and the use of aspirin, the discomfort largely subsided and within 24 hours the pleural rub could no longer be heard. The patient was discharged from the hospital. When re-examined three weeks later he still had some discomfort in the left upper chest and there was still some swelling over the left second costochondral joint with moderate tenderness. This was considerably improved, however. He was advised to continue the application of heat.

CASE 2. A 60-year-old married woman with a history of calcific tendinitis in the right shoulder was admitted to Palo Alto-Stanford Hospital on August 31, 1960. On July 20, 1960, while she was visiting in the Canadian Rockies, fever, chills, general malaise and some cough developed. The patient was treated with broad-spectrum antibiotics and aspirin, and within two days the fever had generally subsided. Following this, however, a painful, tender spot developed in the right anterior chest. The pain was accentuated by deep breathing, coughing and movements of her body, and it persisted until the time the patient was admitted to the hospital. About five days before admission a similar pain developed in the left anterior chest.

On examination the temperature was within normal range, the pulse was 72 per minute and the blood pressure was 120/80 mm of mercury. The costochondral junctions of the third, fourth and eighth ribs on the left were exquisitely tender and a little swollen. There was pronounced tenderness and some swelling over the costochondral junction of the seventh rib on the right. A pleural rub was heard over the left upper chest when the patient lay supine. This was more pronounced in expiration and disappeared when she assumed the upright position. An x-ray film of the chest, an electrocardiogram,

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routine blood studies and urinalysis showed no abnormalities. Treatment with analgesics and diathermy to the anterior chest wall brought about good relief of symptoms.

CASE 3. A 63-year-old dentist had been troubled with chronic bronchitis and moderately advanced, diffuse obstructive emphysema for approximately 10 years. He had a persistent chronic cough with production of small amounts of white sputum, and at times had had febrile exacerbations with production of thick, purulent sputum. Pulmonary function tests had shown findings typical of moderately advanced emphysema. On August 7, 1961, he noticed a pleuritic pain associated with localized tenderness in the upper anterior chest just below the right clavicle. The pain became much worse the next day and on examination there was a visible swelling in the region of the first costochondral junction on the right. On palpation the swollen area, which was 3 to 4 cm in diameter, was exquisitely tender and somewhat soft. There was no redness of the overlying skin. With the patient supine, a very loud, typical pleural rub was audible over the upper third of the right anterior chest. This disappeared whenever he sat upright and promptly reappeared when he resumed the supine position. No abnormalities were seen in an x-ray film of the chest. Identical findings were noted on the following day. Two milliliters of hydrocortisone was injected under local anesthesia into the involved area. The pain was completely gone within two days and the swelling within four days. Several weeks later there was no discernible swelling or tenderness and the pleural rub was absent.

#### DISCUSSION

Tietze's syndrome is characterized by the presence of a painful, tender swelling of one or more costochondral junctions, more commonly on the left side than the right and most often involving the second rib. The condition will usually subside spontaneously with the passage of time but improvement can be hastened with the application of heat or the injection of hydrocortisone into the involved region. The exact nature of the disease process is not clearly understood, but in some cases in which biopsy has been done an inflammatory reaction in the peri-articular tissues of the costochondral joint has been noted.<sup>1</sup> As the parietal pleura directly underlies the deep surface of the involved area, it is reasonable to assume that the inflammatory process may spread at times to the pleural surface and produce a pleural rub. Presumably, pleural rubs are not heard in most cases of Tietze's syndrome because the peri-articular inflammation is not of sufficient severity to directly involve the contiguous pleural surface.

The striking feature in the present cases was the disappearance of the pleural rub when the patient sat upright. The mechanism of this is not clear.

#### SUMMARY

Three cases of Tietze's syndrome have been presented. In each instance, a well marked pleural rub was heard in the area of the chest involved by the disease process. In each instance the rub was heard only in the supine position and disappeared in the upright position.

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## Branchogenic Cysts in the Parotid Salivary Gland

### Reports of Two Cases

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ONLY 14 CASES of parotid branchogenic cysts have been reported in the literature.<sup>7</sup> Two additional cases have been observed at Temple Hospital, Los Angeles, in the last five years. The preoperative diagnosis in both cases was either mixed tumor or carcinoma. Grossly the lesions were contained within the parotid gland and were filled with desquamated keratin. Histologic examination of the lining showed squamous cell epithelium and lymphoid tissue. This report is not submitted with the thought of entering into the controversy as to the origin of these lesions but rather to present the cases on the merit of including this lesion in the differential diagnosis and to emphasize seventh nerve preservation in the dissection.

### Etiology

The occurrence of branchial cyst in salivary glands is quite rare. In over a thousand cases of salivary gland tumors reported by several investigators,<sup>4,10</sup> no branchial cysts were noted. In the year 1908, Lecene<sup>8</sup> reported two unilocular cysts in the parotid and referred to two others in the literature. Cunningham<sup>3</sup> reported one case, Gill<sup>6</sup> two, Bhaskar

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and Bernier<sup>1</sup> five, and Hoffman<sup>7</sup> two. The two cases herein reported bring the total to 16 cases in the literature.

In general, it is believed that most cystic lesions in the lateral aspect of the neck arise from branchial arch anlage. There is controversy as to whether these lesions are actually remnants from the branchial clefts or branchial pouches that subsequently have become surrounded by lymphoid tissue or whether these are epithelial inclusions within the lymph nodes. Several investigators have presented convincing arguments that these are in reality cystic alterations in the cervical lymph nodes and should be called benign lymphoepithelial cysts.<sup>1</sup> It is known that the branchial clefts appear in the fetus soon after the 26th day and disappear toward the 45th day. Development of the lymph nodes does not begin until after the second fetal month. The problem is compounded when these cysts, lined by lymphoid tissue, appear in the region of the parotid gland. The parotid is not derived from the branchial arches but rather from a blind epithelial cord of cells (about the 45th day or the 16 mm stage) from just posterior to the angle of the mouth. It subsequently undergoes branching, forming a ductal system, and becomes incorporated in mesenchyme, forming the nidus of the future parotid gland.

The epithelium of these cysts may give some insight as to their origin. If the entrapped cells are from the pouch, the lining may be ciliated columnar epithelium. It is squamous if the origin was from the cleft. Controversy arises also when trying to decide whether these are from the first or second branchial anlage.

Frazier<sup>5</sup> first suggested that a first branchial remnant would occur below the eustachial tubes, behind the tensor palati and in front of the carotid artery and stylopharyngeus muscle. It would be above the level of the hyoid and behind the angle of the mandible. Byars<sup>2</sup> emphasized the diagnosis of a first branchial cleft anomaly in the presence of any persistent fistula or sinus high in the neck associated with any external auditory canal discharge without middle ear infection. That was the site of the cysts in the two cases herein reported. Both were contained within the parotid gland, in close relationship to the external cartilagenous canal and lateral to the seventh nerve.

Most branchial cysts are believed to have arisen from the second branchial cleft. In the development of the neck, the second branchial arch or bar outgrows the rest of the arches in a caudal direction and overlaps them. This produces a recess on the side of the embryonic neck that is lined with epithelium and is called the lateral cervical sinus. It is at this site that most of these cysts originate.

### Branchogenic Cysts

In general, most branchial or branchogenic cysts appear as painless, fluctuant, smooth, soft swellings in the upper lateral aspect of the neck, along and anterior to the upper third of the sternocleidomastoid muscle. They can grow to a very conspicuous size. Such lesions have been reported at ages from four months to 80 years,<sup>9</sup> most of them from age 10 to age 40. The branchial fistulae and sinuses are seen at birth, but not the cysts. They occur with equal frequency in both sexes. Most of these cysts have lymphoid tissue in their walls. They vary and fluctuate in size and may arise after upper respiratory tract or dental or local infection. The contents of these cysts varies and can appear thick, transparent, mucoid, sticky, opaque, milky, clear, cheese-like or turbid. Aspirated fluid may have a high cholesterol content and it may contain many crystals or epithelial cells.

The treatment is complete surgical excision, avoiding injury to the seventh nerve, the vagus and hypoglossal nerves and the major vessels of the neck. The use of sclerosing solutions, irradiation and repeated aspirations or incisions and drainage is to be condemned.

### REPORTS OF CASES

CASE 1.—A 49-year-old white man first noted the development of a small swelling in the left preauricular area three years previously after an acute physical exertion. The lesion continued to increase in size but caused no discomfort. Upon physical examination a 5 × 3 cm soft, circumscribed nontender mass was palpated just posterior to the angle of the mandible, up to the preauricular area and along the upper edge of the left sternocleidomastoid muscle. The facial nerve was intact.

With the patient under thiopental sodium (sodium pentothal) anesthetic, the parotid area was surgically exposed. The mass (Figure 1) was encompassed within the superficial lobe of the parotid with a ramification extending posterior to the ascending ramus of the mandible and was closely attached to the external auditory canal. The facial nerve was identified by the superior approach as it came from behind the styloid process. The mass was removed without compromise to its capsule or injury to the nerve. The specimen consisted of parotid salivary gland measuring 8.5 × 5.5 × 2.5 cm, enclosing a palpably doughy mass which on sectioning was seen to be filled with amorphous, glistening, grey-white and yellowish material resembling keratin (Figure 2). The cyst wall was grey-pink with plaques of white tissue adherent. A piece of red muscle, 3.5 × 3 cm, was present on the undersurface of the resected mass. Also





Figure 1.—(Case 1)—Cut surface of branchogenic cyst in the superficial lobe of the parotid showing flaky keratinized material.



Figure 3.—(Case 2.)—Cut surface of branchogenic cyst showing amorphous keratin material.

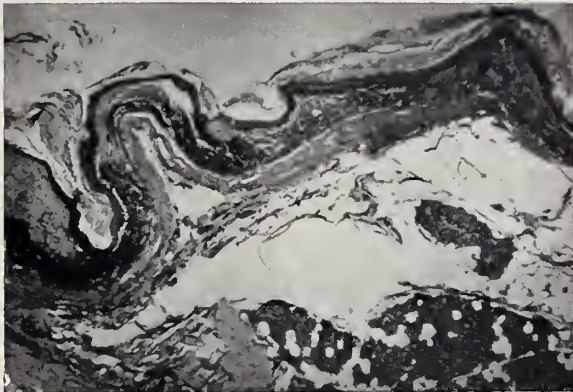


Figure 2.—(Case 1.)—Histologic section (×10) showing cyst wall lined by stratified squamous epithelium and small lymphoid masses with adjacent parotid gland.

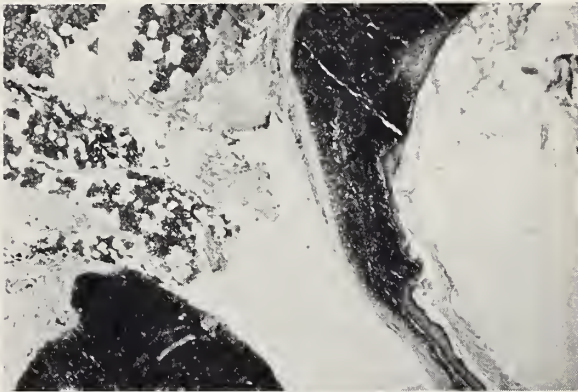


Figure 4.—(Case 2.)—Photomicrograph (×10) displaying cyst wall with squamous lining, lymphoid masses and parotid gland.

present in the vicinity of the wall of the cyst was a compressed lymphoid structure 1.5 cm in greatest diameter. The patient made good recovery.

**CASE 2.**—A 49-year-old woman was admitted to the hospital for the excision of a left parotid mass. Six months previously the patient had noticed a mass in the upper lobe of the left parotid gland. It was not tender or painful but had gradually increased in size. In the period between first notice of the mass and admittance to hospital the patient was under active treatment for recurrent acute otitis externa on the left side.

At time of examination otitis had subsided. A rounded, smooth mass, not attached to the overlying skin, was palpated in the upper portion of the parotid gland 2 cm anterior to the tragus. No evidence of weakness of the facial nerve was evoked. A few enlarged, soft lymph nodes were felt in the area of the mass.

At operation, after the facial nerve and its branches were exposed and freed from the overlying parotid gland, the superficial lobe of the gland containing the nodule was completely re-

sected. The operative specimen was the superficial lobe of the parotid gland which measured  $7 \times 3 \times 2$  cm and enclosed a palpable 1.5 cm nodule situated at one pole. On cut surface this nodule was observed to be a smooth-lined cyst containing inspissated white material resembling keratin (Figures 3 and 4).

The postoperative course was uneventful, and the patient was discharged on the fifth day.

#### SUMMARY

Two additional cases of parotid branchogenic cysts are presented and the etiology of such lesions is discussed. Surgical excision by subtotal parotidectomy was carried out, care being taken to preserve the seventh nerve. Lesions of this kind, which are benign, should be considered in the differential diagnosis of parotid masses.

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### Granulocytic Leukemoid Reactions Associated with Malignant Disease

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IN GRANULOCYTIC LEUKEMOID reactions associated with malignant disease, the lung, stomach and breast have been reported as the most frequent primary sites, but neoplasms of the kidney, gallbladder, pancreas and liver have also been implicated. These reactions usually can be differentiated from chronic myelocytic leukemia clinically, but leukocyte counts in excess of 100,000 per cu mm may be troublesome. The unusual counts could result from overproduction with an increase in leukocytes throughout the body, or merely from redistribution due to breakdown of the normal bone marrow-blood barrier.

This report describes a patient with a giant cell carcinoma of the lung and a pronounced leukemoid reaction without demonstrable bone marrow metastasis. Hematologic data on three patients with similar conditions are given. Determinations of alkaline phosphatase in neutrophilic leukocytes and absolute basophil counts were helpful in arriving at the correct diagnosis. Data from a cursory review of the literature on leukemoid reactions associated with carcinoma are summarized.

#### REPORT OF A CASE

An 85-year-old widow was admitted to San Francisco General Hospital on March 19, 1962, one day after the onset of chills and fever. A month pre-

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viously she had felt a sharp sudden mid-back pain after turning quickly. Transient "paralysis" of the right arm subsided spontaneously. This was followed by progressive weakness. No history of cough or dyspnea was elicited.

On admission the temperature was 102.4°, the pulse rate 108 and respirations 24 per minute. The blood pressure was 108/40 mm of mercury. The patient appeared acutely and chronically ill and in moderate respiratory distress. A soft lymph node 3 cm in diameter was felt in the left supraclavicular area. Subcrepitant rales were heard in the left posterior lung base. No abnormalities were noted on examination of the abdomen and the heart.

Initial laboratory data included a hematocrit of 33 per cent, a leukocyte count of 48,000 per cu mm with 84 per cent mature neutrophils, 6 per cent banded forms, 8 per cent lymphocytes and 2 per cent monocytes; no myelocytes were seen. An x-ray film of the chest showed a 4-cm circumscribed spherical density in the superior segment of the left lower lobe with a fluffy left lower lobe infiltrate. There was no evidence of osseous metastasis in the ribs, thoracic vertebral column, scapulae, clavicles or the proximal halves of the humeri. No further skeletal x-ray examinations were done. Results of urinalysis were within normal limits. The blood urea nitrogen was 17 mg per 100 ml, the alkaline phosphatase was 14 Bessie-Lowry units (normal range for adults 0.8 to 3.0 units), and lactic acid dehydrogenase was 225 units (normal up to 110 units). Six blood cultures showed no growth. Results of skin tests for tuberculosis, coccidioidomycosis and histoplasmosis were negative.

The patient was treated with antibiotics but continued to be febrile throughout her entire stay in hospital. A lymph node biopsy showed malignant cells of undetermined type. Leukocyte content rose to 138,000 per cu mm on the 11th hospital day (for the differential count at that time see Table 1, Case 20). At this time the hemoglobin was 8.8 gm per 100 cc, erythrocytes numbered 3,390,000 per cu mm, the hematocrit was 33 per cent, reticulocyte count 1.9 per cent and platelet count 491,000. Toxic granules were seen in many leukocytes; all neutrophils were strongly positive for alkaline phosphatase;\* rare nucleated red blood cells were seen on the peripheral smear. A sternal marrow aspirate was hypercellular; mature granulocytic elements predominated, many showed toxic granulations. No

\*The alkaline phosphatase in mature neutrophils and neutrophil bands in this case and 3 other cases (see Table 2) was stained by the modified Gomori's method<sup>12</sup> and graded as follows:

*One plus:* faint perinuclear clumping of the black cobalt sulfide.

*Two plus:* considerable precipitate in the cytoplasm, but with clear areas remaining.

*Three plus:* cytoplasm loosely filled with fine to coarse granules.

*Four plus:* cell cytoplasm jet-black, with no evidence of clumping and no clearing visible.

malignant cells were seen. The patient died on the 13th hospital day.

At autopsy, two large, round subcutaneous masses approximately 10 cm in diameter were found in the left neck and between the scapulae. They invaded the deep tissues and the neighboring bone but did not involve the epidermis. There were also enlarged lymph nodes in the left axilla, above the left clavicle and in the left anterior cervical region. There was a soft, round, 4-cm, yellowish white tumor in the upper segment of the left lower lobe of the lung, encroaching upon the corresponding bronchus.

Microscopic examination of the tumor showed it to be composed of extremely pleomorphic epithelial cells, with many bizarre giant forms containing finely vacuolated amphophilic cytoplasm and large single or multiple pale nuclei with prominent nucleoli and peripherally clumped chromatin. Mitoses were frequent. Intercellular bridges were not seen and there was no gland formation, but in some areas the tumor was growing in an alveolar pattern. Special stains (PAS-digested and colloidal iron) did not show any intracytoplasmic or interstitial mucous material. Occasionally, carcinomatous emboli were found in the adjacent small venules, and in the more distant lung parenchyma there were clusters of malignant cells reminiscent of carcinomatous pneumonia. The adjacent bronchial lymph nodes were replaced by metastatic tumor.

The liver, weighing 2,100 gm, was massively involved by partially necrotic tumor extending from the left lobe of the liver to the gastric wall and toward the splenic hilus. Sections of the metastatic lesions in the liver, cervical and axillary lymph nodes, left adrenal gland and subcutaneous mass from the back showed the same histological pattern as the primary lung tumor. The spleen was not enlarged; the microscopic examination showed

TABLE 1.—Granulocytic Leukemoid Reaction in Malignant Disease

Patient	Tumor		Leukocytes per cu mm	Blood				Bone Marrow		Author		
	Primary	Metastasis		Poly.	Band	Myelo-cyte	Blast.	Eosin.	NR		Source	Metastasis
1.	Lung	Lung	50,000	---	---	---	---	---	---	---	Kapris <sup>6</sup> (1907)	
2.	Breast	Lymph nodes	120,000	92	0	4	0	0	X	A.	No	Krumbar <sup>8</sup> (1926)
3.	Liver	Lymph nodes	34,000	17	25	14	0	27	X	A.	No	Sonnenfeld <sup>11</sup> (1929)
4.	Stomach	None	125,000	28	39	19	0	1	X	A.	No	Sonnenfeld <sup>11</sup> (1929)
5.	Mediastinal carcinoma	Liver, spleen	180,000	85	0	12	0	0	0	A.	No	Jackson <sup>5</sup> (1937)
6.	Lung	Lymph nodes, liver, adrenal, kidney, pancreas	116,000	85	0	0	0	1	X	A.	No	Jackson <sup>5</sup> (1937)
7.	Stomach	None	110,000	94	0	2	0	0	+	A.	No	Meyer & Rotter <sup>9</sup> (1942)
8.	Stomach	Spleen, liver, lymph nodes	193,000	78	11	9	0	0	0	A.	No	Meyer & Rotter <sup>9</sup> (1942)
9.	Lung	Adrenal	112,500	47	46	3	0	0	0	A.	Yes	Hinslaw & Hoxie <sup>4</sup> (1949)
10.	Lung	None	90,000	31	63	0	0	2	0	A.	No	Fahey <sup>1</sup> (1951)
11.	Lung	Lymph nodes, liver	116,000	47	46	0	0	2	X	A.	No	Fahey <sup>1</sup> (1951)
12.	Lung	Lymph nodes, liver, spleen, adrenal	58,800	93	0	6	1	0	X	A.	Yes	Fahey <sup>1</sup> (1951)
13.	Lung	Lymph nodes	51,000	93	0	6	1	0	+	A.	No	Fahey <sup>1</sup> (1951)
14.	Kidney	Lung, thyroid, liver, adrenals, lymph nodes	67,000	82	9	0	0	1	X	A.	Yes	Hensler <sup>3</sup> (1953)
15.	Gallbladder	Liver, lymph nodes	39,400	44	21	5	0	20	0	A., As.	Yes	Knick & Schilling <sup>7</sup> (1960)
16.	Gallbladder	Liver, kidney	42,400	85	7	0	0	1	0	A., As.	No	Knick & Schilling <sup>7</sup> (1960)
17.	Pancreas	Liver, lymph nodes	45,800	81	8	0	0	3	0	A., As.	Yes	Knick & Schilling <sup>7</sup> (1960)
18.	Lung	Adrenals	94,000	71	14.5	0	0	0	X	A., As.	No	Zarafonitis & Joseph <sup>13</sup> (1961)
19.	Kidney	Lymph nodes, bone marrow	52,000	83	13	0	0	0	0	A., As.	Yes	Reiss, O. <sup>10</sup> (1962)
20.	Lung	Lymph nodes, adrenal, skin, liver	188,000	86.5	6	0	0	0	0.5	A., As.	No	This study
21.	Liver	Lymph nodes, pericardium, lung	76,000	75	20	3	0	0	0	A., As.	No	This study
22.	Kidney	Lymph nodes, liver, spleen, lung	140,500	85	5	0	0	0	0	A., As.	Yes	This study
23.	Thyroid	adrenal, pancreas, vertebral marrow	60,000	84	10.5	0	0	0	.25	A., As.	No	This study

X = no mention  
NR = Nucleated erythrocytes per 100 leukocytes

+ = present  
O = not found

A. = Autopsy  
As. = Aspiration



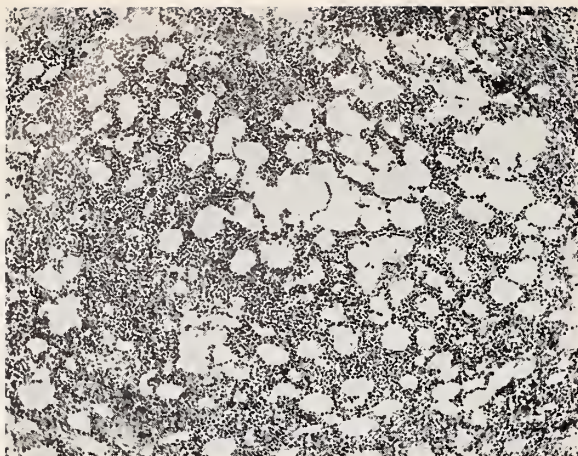


Figure 1.—Bone marrow aspirate, showing granulocytic hyperplasia and preservation of fat spaces. Hematoxylin and eosin stain (×100).

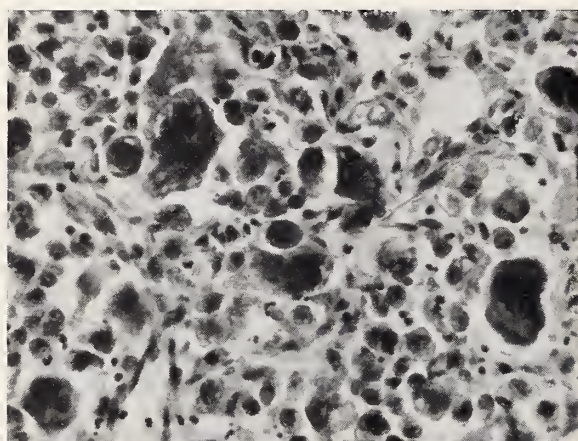


Figure 2.—Section of primary giant cell carcinoma of the lung; note sprinkling of neutrophils throughout the tumor (×475).

many neutrophils in the red pulp, and occasional nucleated red cells and megakaryocytes. Gross examination of the cranium, vertebral column, ribs and sternum revealed no metastatic lesions. The vertebral rib and sternal bone marrow were soft and dark red. The microscopic examination of the sternal and vertebral sections did not show any metastasis. There was only moderate bone marrow hyperplasia, with preservation of many small fat spaces. The final major pathological diagnosis was 1. Giant cell carcinoma of lung (upper segment of the left lower lobe) with metastasis to the liver and periportal lymph nodes and invasion of the stomach wall and splenic hilus. Metastases to the left adrenal gland, cervical and axillary lymph nodes and deep subcutaneous tissues of the back. 2. Leukemoid reaction. 3. Arterial thrombosis, left kidney, with cortical infarct (1 x 1 cm).

Table 1 summarizes the pertinent data from 23 cases noted in a limited review of the literature and

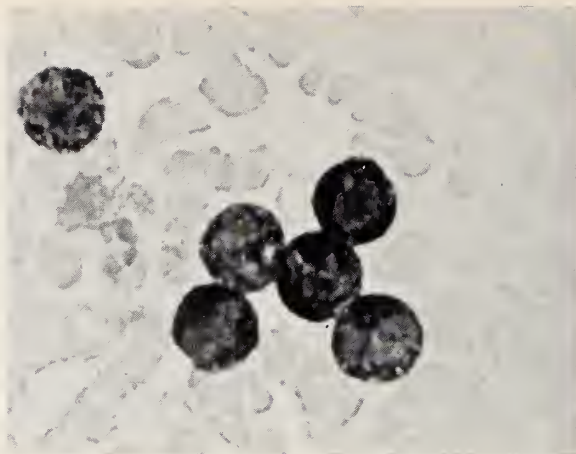


Figure 3.—Peripheral blood stained to show alkaline phosphatase content of cells. Note strongly positive (3+ to 4+) neutrophils and bands (×950).

includes four observed by us. Table 22 shows, in addition, the diagnostic value of total basophil counts and alkaline phosphatase stains, as seen in those four cases. In Table 3 the data from six patients with chronic myelogenous leukemia are shown to contrast the different values of basophil counts and alkaline phosphatase stains particularly.

#### DISCUSSION

Certain hematologic features are helpful in distinguishing granulocytic leukemoid reactions from chronic myelocytic leukemia. The blood in leukemoid reactions shows predominantly polymorphonuclear cells. The alkaline phosphatase content of neutrophilic leukocytes and banded forms is strongly positive, basophils are decreased and there may be toxic granulation, cytoplasmic vacuoles and indistinct nuclear membranes. Pronounced eosinophilia is seen occasionally. Nucleated red cells are not particularly prominent. The marrow shows less overall hyperplasia and less increase in myeloid erythroid ratio than that in chronic myelocytic leukemia. In chronic myelocytic leukemia more primitive granulocytes are seen, the alkaline phosphatase reaction is usually negative and the number of basophils is greatly increased.

Leukemoid reactions often occur without demonstrable bone marrow involvement by the cancer. In 12 of the 19 reviewed cases and in three of the four that we observed, no marrow metastasis was reported at autopsy; however, a complete post-mortem examination of the skeleton was seldom carried out.

The lung appears to be the most common primary site in patients with leukemoid reactions associated with cancer; it was involved in nine of the twenty-three cases described here. Lymph nodes were the most common secondary sites and were



TABLE 2.—Blood Features in Leukemoid Reaction

Case No.	WBC × 1000 per cu mm	PMN Per Cent	NF Per Cent	MM Per Cent	M Per Cent	BL Per Cent	Eo. Per Cent	Baso. Per Cent	Lymph. Per Cent	Mono. Per Cent	Alk. Phos.	Baso. per cu mm	BM NR
20.....	60	84	10.5	0	0	0	0	0	3	2.5	3-4+	0	244
21.....	76	75	19	3	0	0	0	1	1	1	3-4+	145	236
22.....	140	85	5	0	0	0	0	0	9	1	3-4+	5	106
23.....	188	86.5	6	1.5	4.5	0	0	0	1	0.5	3-4+	0	206

PMN=Polymorphonuclear  
NF=Non-filamented cell (stab)  
MM=Metamyelocytes  
BM NR=Bone marrow nucleated erythrocytes per 1000 leukocytes

M=Myelocytes  
BL=Blasts  
Eo=Eosinophils  
Baso=Basophils  
Lymph=Lymphocytes  
Mono=Monocytes

TABLE 3.—Blood Features in Chronic Myelocytic Leukemia

Pt.	WBC × 1000 per cu mm	PMN Per Cent	NF Per Cent	MM Per Cent	M Per Cent	BL Per Cent	Eo. Per Cent	Baso. Per Cent	Lymph. Per Cent	Mono. Per Cent	Alk. Phos.	Baso. per cu mm	BM NR
A .....	21.2	52.5	14.5	6.5	12	0	2	3.5	5.5	3.5	0-1+	394	114
B .....	53	40	19.5	17.5	9.5	0	1.5	7	4	1	0-1+	1,071	52
C .....	74.5	40	20	13	4	0	0	3	15	5	0-1+	1,695	68
D .....	83.5	25.5	5	6.5	27.5	6.5	1	1.5	25.5	1	0-1+	668	20
E .....	99.6	45.6	21	11	11.6	1.6	0.4	1.4	4.8	2.6	0-1+	2,360	24
F .....	147	12.5	33	7	17	0	1.5	14.5	12	2.5	0-1+	12,450	83

PMN=Polymorphonuclear  
NF=Non-filamented cell (stab)  
MM=Metamyelocytes  
BM NR=Bone marrow nucleated erythrocytes per 1000 leukocytes

M=Myelocytes  
BL=Blasts  
Eo=Eosinophils  
Baso=Basophils  
Lymph=Lymphocytes  
Mono=Monocytes

involved in 14 of 23 cases; liver metastasis was present in 11 cases. (See Table 1.)

The moderate degree of marrow hyperplasia, even with very high leukocyte count and the lack of extramedullary granulopoiesis in most cases, suggests that leukemoid reactions may result from an increase in the intravascular leukocyte compartment, rather than from an increase in total body leukocytes. Since a complete autopsy search for osseous metastasis is seldom done, it is difficult to make any definite statement regarding the bone marrow involvement; it appears, however, that in the reported 23 cases the bone marrow was infrequently involved.

#### SUMMARY

A case of leukemoid granulocytic reaction associated with a giant cell carcinoma of the lung is reported, and hematologic data from three similar patients are appended and compared with data on six cases of chronic myelogenous leukemia. In a limited review of the literature reports of 19 additional cases were found. The characteristic blood picture of leukemoid reactions includes the predominance of polymorphonuclear cells, a very low basophil count and strongly positive alkaline phosphatase stain.

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#### One-Stage Resection of Seven Arterial Aneurysms

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THE FINDING of multiple arterial aneurysms in arteriosclerotic patients is no longer unusual. In addition to the case here reported, I have operated upon one patient with a large abdominal aortic aneurysm associated with large, bilateral, iliac and hy-

Submitted January 18, 1963.

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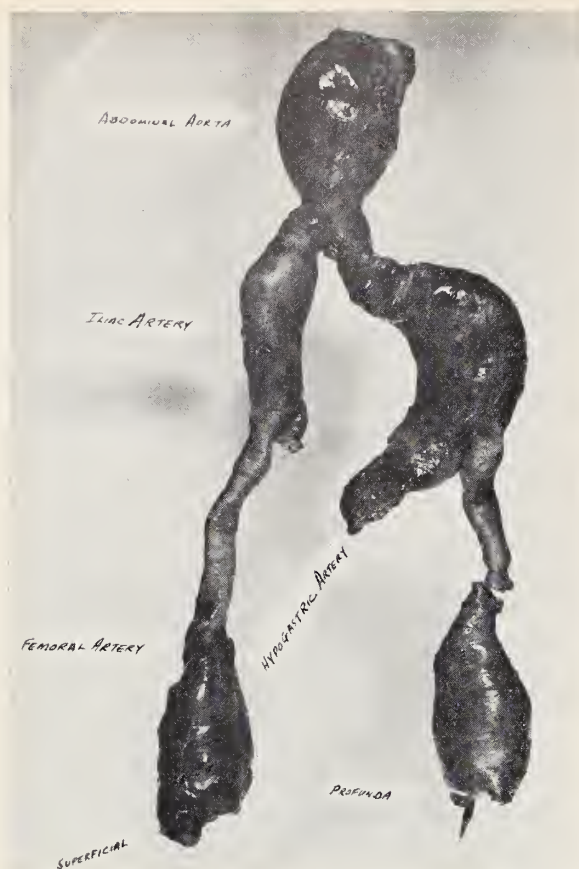


Figure 1.—Surgical specimen showing multiple arterial aneurysms. (Official U. S. Navy photograph.)

pogastric aneurysms, and have observed other cases in which abdominal aortic aneurysms were associated with iliac aneurysms. Gliedman and coworkers<sup>1</sup> in 1957 reviewed the autopsy material from Kings County Hospital (New York) over a 15-year period and found that of 68 patients who had died with untreated abdominal aortic aneurysms, seven had multiple arteriosclerotic aneurysms. However, perusal of the literature reveals only three reports<sup>2,3,4</sup> of cases in which multiple aneurysms were resected, and in only one of these was it a one-stage procedure which included ligation of the hypogastric and profunda femoral arteries. In this lone report the patient's postoperative course was not fully described. To ligate all arteries between the renals and the superficial femorals, particularly with the absence of occlusive disease and its compensatory collaterals, is a formidable procedure.

#### REPORT OF A CASE

The patient, a 55-year-old man, was admitted to the United States Naval Hospital, San Diego, after pulsating abdominal and inguinal masses had pro-

gressively enlarged during a six-month period of observation. He denied symptoms other than vague, intermittent backache, and, in particular, denied intermittent claudication. He noted cardiac palpitations with exertion or emotional distress but this was immediately relieved by rest.

He had been in a hospital two years (1955-1956) for active tuberculosis and for two months in 1960 for a severe closed fracture of the left tibia and fibula. During both periods he had mild prostatism which cleared without operation.

Upon physical examination the patient was noted to be tall and thin and in no distress. In the mid-epigastric region there was a 12.0 cm pulsating mass extending more to the right than to the left of the midline. It became smaller over the sacral promontory and then ballooned out into bilateral iliac masses (pulsatile) which faded under the inguinal ligaments but extended downward as bulging and pulsating femoral masses which measured 7.0 x 12.0 cm. Each popliteal space contained a pulsating but easily compressible mass. The lower extremities appeared healthy and the posterior tibial pulsations were strong bilaterally.

Blood cell counts were within normal limits. Blood urea nitrogen was 15 mg per ml and serum cholesterol 148 mg per ml. A barium swallow x-ray study showed minimal dilatation of the aortic arch. Films of the chest and an electrocardiogram were within normal limits. Translumbal aortography and percutaneous femoral arteriography, done mostly for academic reasons, confirmed the presence of abdominal aortic, iliac and femoral aneurysms.

The popliteal aneurysms were not visualized. Other than the aneurysms there were no findings to suggest Marfan's syndrome. The progressive enlargement of the aneurysms was felt to be a strong indication for surgical operation despite the absence of symptoms.

On January 20, 1961, with the patient under general endotracheal anesthesia, full length abdominal and vertical femoral incisions exposed the large aneurysms shown in Figure 1. The renal arteries were not involved but the femoral aneurysms extended down into the superficial femoral arteries well past the profunda branches. The lumbar, inferior mesenteric, hypogastric and profunda femorus arteries were ligated and the specimen removed from just below the renal arteries well down onto each superficial femoral artery. A knitted Teflon® bifurcation graft was used as replacement. The popliteal aneurysms were not explored.

The postoperative course was complicated by necrotizing posterior urethritis with mild stricture

which the consulting urologist deemed due to use of an indwelling catheter rather than to localized arterial insufficiency. This condition responded to conservative treatment. Sigmoidoscopy on the first and second postoperative days revealed no abnormality of the rectosigmoid colon. Normal bowel function promptly resumed. Popliteal and ankle pulses remained equal and strong. The patient's main complaint was of buttock and thigh claudication, which severely limited ambulation during the first three postoperative weeks. He could walk no more than 30 feet at a time. The buttock and thigh muscles atrophied but no skin changes occurred. Eight weeks after operation the patient could slowly walk one block, his now small muscle groups were firm and muscle strength and ability to walk improved daily. He slowly regained a 20-pound loss of weight.

When interviewed two years after the operation the patient had no complaints other than bilateral buttock claudication when he walked fast for two blocks or walked rapidly up hill. His general health was good. Bilateral popliteal aneurysms remained but circulation to the feet was excellent.

#### DISCUSSION

Multiple aneurysms in continuity can be safely resected but the morbidity may be great. Some observers estimate that necrosis of the rectum will occur in 10 per cent of patients who have simultaneous ligation of patent inferior mesenteric and hypogastric arteries. I doubt the incidence is so high but I have observed the condition following such operation. In the case here reported the buttock and thigh ischemia would have been less had the deep femoral circulations been maintained, and this possibly could have been done by running branch grafts from the femoral segments to the respective profunda arteries. It is not likely that the diseased hypogastric arteries could have been salvaged.

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## Severe Salicylism and Acute Pancreatitis

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IN EPIDEMIOLOGIC SURVEYS on accidental poisoning, the ingestion of aspirin accounts for 16 to 39 per cent of the cases,<sup>3,14,16</sup> yet mortality due to salicylism is low.<sup>3,14,16</sup> The evaluation of severity and ultimate prognosis by laboratory tests in each case was impossible until Done's report<sup>4</sup> of  $S_0$ \* levels in salicylism provided clinicians with a direct means of evaluating severity.

In the patient here to be reported upon, the history of ingestion of acetyl salicylic acid was obscure at first. Clinical and laboratory findings suggested acute pancreatitis and further studies (confirmed by careful history) established aspirin intoxication. Relationship between salicylate poisoning and pancreatitis is speculative.

#### REPORT OF A CASE

A 2-year-old boy awoke from a deep sleep on January 13, 1962, in the early morning hours and complained of some lower abdominal pain. At that time his mother noted that he was breathing rapidly but she was not overly concerned. Over the next nine hours he vomited about five times. The pain continued and he was brought to the Emergency Room at San Francisco General Hospital. Although his mother denied possible ingestion of aspirin, the child appeared acutely ill and was admitted to the hospital.

On entry, the temperature was 101° F, the pulse rate 160, respirations 70 per minute, blood pressure 100/60 mm of mercury, weight 9.5 kg, and the body surface area 0.45 sq meters. The child was semi-stuporous but responded to painful stimuli. There were signs of dehydration—poor skin turgor, sunken eyes and lack of oral secretions. The abdomen was diffusely tender with vague localization from one examination to the next. A tentative diagnosis of salicylism was made. Reaction to a ferric chloride test on the urine was positive but was misinterpreted by an inexperienced observer.

Packed red blood cell volume was 39 per cent. Leukocytes numbered 23,000 per cu mm with 73 per cent segmented polymorphonuclear leukocytes, 22 per cent lymphocytes and 6 per cent monocytes. Specific gravity of the urine was 1.008, pH 5.3, reaction for acetonuria 3+, reducing substance and protein negative, and urinary sediment normal. Glucose content of the blood was 50 mg per 100 ml,

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Submitted January 4, 1963.

\*  $S_0$ —theoretical (extrapolated) salicylate level at zero time.



TABLE 1.—Laboratory Data

	Ad- mission	Hours Later		
		12	27	40
SERUM:				
Sodium (mEq per liter) ....	140.0	137.0	148.0	.....
Potassium (mEq per liter) ..	5.4	3.8	5.2	.....
Carbon dioxide (mEq per liter) .....	11.0	9.0	15.0	.....
PCO <sub>2</sub> (mM/L) * .....	.....	17.5	17.5	.....
pH .....	.....	7.36	7.56	.....
Amylase (units) .....	1560.0	.....	.....	.....
Glucose (mg per 100 ml) ..	50.0	.....	.....	.....
Salicylate (mg per 100 ml) ..	.....	58.0	41.0	13.0
DIALYSATE:				
Salicylate removed (mg) ....	.....	.....	390.0	110.0
URINE:				
pH .....	5.3	5.5	.....	6.0
Acetone .....	+ + +	.....	.....	.....
Reducing substance .....	0	.....	.....	.....

\* Partial pressure carbon dioxide, millimols per liter.

TABLE 2.—Data on Therapy of Patient with Salicylism

	Ad- mission	Hours Later		
		12	27	37
INTRAVENOUS:				
Water (cc) .....	2,000	800	900	.....
Sodium (mEq) .....	120	17	30	.....
Cl (mEq) .....	37	32	40	.....
Potassium (mEq) .....	.....	15	10	.....
Glucose (gm) .....	100	40	45	.....
Lactate (mEq) .....	83	.....	.....	.....
DIALYSIS:				
Peridial®* .....	.....	} 11 bottles† .....		
6 mEq KCl .....	.....			
1.5 per cent Dextrose .....	.....			
Ringer's lactate* .....	.....	} 6 bottles‡ .....		
1.5 per cent Dextrose .....	.....			

\* Contents:

	cc	mEq					Osmolarity
	H <sub>2</sub> O	Na	K	Ca	Mg	Cl	HCO <sub>3</sub>
Peridial® 1000	140	.....	4.0	1.5	102.5	43	371.0
Ringer's lactate 1000	130	4.0	3.0	.....	109.0	28	355.5

† 1,000 ml each (from 12th to 27th hours).

‡ 127 to 37 hours.

sodium 140 mEq per liter, potassium 5.4 mEq per liter, and carbon dioxide 11 mEq per liter. The cerebrospinal fluid protein content was 46 mg per 100 ml, sugar 71 mg per ml and white blood cell count 3 per cu mm. The fluid was negative for Gram staining organisms. No abnormality was noted in examination of aspirated abdominal fluid.

Careful review of the clinical findings suggested acute pancreatitis. Serum amylase shortly after admission was 1,560 units on duplicate specimens. During the next 12 hours the patient received, intravenously, 2,000 ml of water, 120 mEq of sodium, 37 mEq of chloride, 83 mEq of lactate and 100 gm of glucose. Dehydration disappeared, respirations continued at 60 per minute, and the child remained semi-stuporous. A diagnosis of salicylism was con-

sidered in spite of the previous ferric chloride test that had been reported as negative.

In exploring the patient's environment, it was discovered that his father and siblings cared for him while his mother worked from 3 p.m. until midnight. Further laboratory tests confirmed the suspicion of salicylism; reactions to ferric chloride tests on serum and urine specimens were positive. The serum salicylate level 12 hours after admission was 58 mg per ml—above the range rated as "severe" on Done's chart (Chart 1). Broken adult aspirin tablets were found later in the child's play area. A careful review suggested that he had ingested a quantity of aspirin 30 hours before the salicylate determination was carried out. Pertinent laboratory and therapeutic data are presented in Tables 1 and 2.

Twelve hours after the patient was admitted, the urine pH was 5.5, after generous alkali therapy. Peritoneal dialysis was instituted because of the patient's clinical state, the significance of the salicylate level at 30 hours (Chart 1), failure to respond to adequate alkali therapy and the risk attendant upon further alkali therapy.

During the next 15 hours, 390 mg of salicylate was removed by peritoneal dialysis, using 11 (1,000 ml) bottles of Peridial® with 6 mEq of potassium chloride and 15 gm of dextrose added to each bottle. During this time serum pH rose to 7.56, due in part to the amount of bicarbonate in Peridial® (Table 1).

Because of this alkalosis, the dialysis fluid was changed to lactated Ringer's solution with 15 gm dextrose added to each 1,000-ml bottle. With the use of six bottles over the next 10-hour period, 110 mg of salicylate was removed. Tachypnea disappeared and the child seemed alert. Urine pH was 6.0 and serum salicylate decreased to 13 mg per liter. Peritoneal dialysis and intravenous therapy were then discontinued and complete recovery ensued quickly.

## DISCUSSION

Abdominal pain, fever, increased leukocyte content in the blood with a shift to the left in cell differential, and an amylase content of 1,500 units suggest that this child had pancreatitis in association with salicylism. It cannot be determined from the available data if toxic amounts of acetyl salicylic acid were responsible for the pancreatitis. Search of the literature did not reveal any previously reported association between salicylism and pancreatitis.<sup>10,12,17,25</sup> Although it is known that gastric ulceration provokes excessive amylase elaboration, the possible production of gastric ulceration by acetyl salicylic acid is controversial. Some reports indicate that overdosage or prolonged use of

acetyl salicylic acid will produce gastric ulceration with hematemesis and melena,<sup>5,13</sup> although others have failed to confirm these findings.<sup>21</sup>

An increase in serum amylase is seen in a variety of other extra-pancreatic conditions, among which are perforated peptic ulcer,<sup>7</sup> parotitis, abscess or obstruction of salivary ducts, carcinoma at the ampulla of Vater, acute alcoholism, biliary dyskinesia from opiate administration,<sup>1,19,24</sup> extrahepatic obstruction, cholecystitis, choledocholithiasis, ruptured ectopic pregnancy, high intestinal obstruction,<sup>7</sup> myocardial infarction, peritonitis and renal insufficiency with uremia.\* The amylase test is quite specific and normal values in the presence of acute pancreatitis are uncommon.<sup>12</sup> Although elevated levels have been reported in the conditions enumerated, a concentration in excess of 500<sup>22</sup> to 1000<sup>11</sup> units is almost diagnostic of pancreatic disease.

Excretion of salicylate is directly proportional to urine pH. Alkali therapy generally alters the urine and serum acidity in salicylism.<sup>20,26</sup> Alkalinization of the urine with a dose of 3.5 mEq of sodium lactate per kilogram of body weight,<sup>20</sup> to a total dose of less than 54 mEq of sodium bicarbonate,<sup>26</sup> usually brings about systemic alkalosis. Although 8 mEq of sodium lactate per kilogram was given to this patient before the diagnosis was established, this amount did not produce alkalosis and did not alkalinize the urine.

The efficacy, efficiency and safety of peritoneal dialysis in severe salicylism has been well established.<sup>9,15</sup> In our patient, assuming an extracellular volume of 250 ml per kilogram<sup>2</sup> and uniform dispersion of extracellular salicylate, 145 mg of salicylate was circulating in the extracellular compartment before dialysis was carried out. During a critical period of 25 hours, 500 mg of salicylate was removed by peritoneal dialysis, presumably most of it from the intracellular compartment. Etteldorf<sup>9</sup> showed in experimental animals that albumin in dialyzing fluid will continue to bind salicylates against a gradient. His results in seven human cases, in which albumin was added to the dialyzing fluid, were encouraging but effects were not comparable to those observed in animals. The use of a dialyzing solution rich in albumin might well have been effective in the present case, but this is a matter for speculation.

The high salicylate level plotted in Chart 1 at the time of admission correlated with the clinical status. According to Done,<sup>4</sup> fall of the salicylate level with time is a first order reaction. With peritoneal dialysis one might expect more rapid decline of salicylate levels. In the case here reported, 390 mg of salicylate was removed by peritoneal dialysis over a 15-hour period, and the blood serum sali-

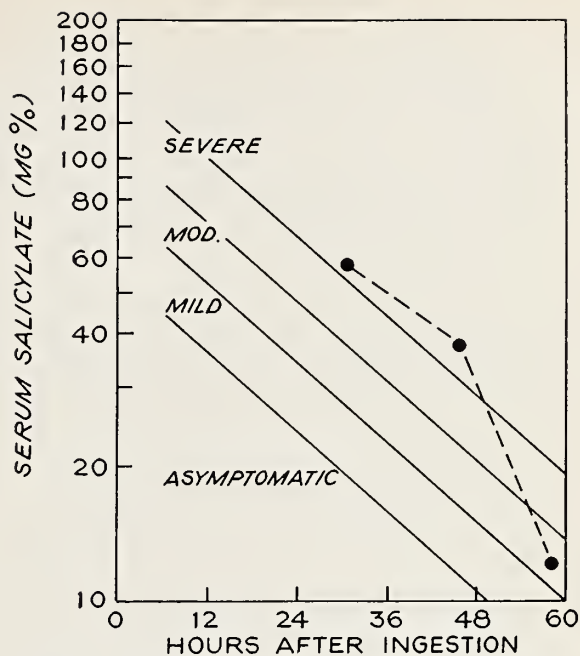


Chart 1.—Sodium salicylate levels plotted on Done's nomogram (with permission).

cylate level fell according to a first order reaction. Thirteen hours thereafter 110 mg of salicylate had been removed by dialysis, the serum level was 13 mg per 100 ml, moving it from the severe to the moderate zone on Chart 1.

#### SUMMARY

A case of salicylism is presented in which there is evidence suggestive of acute pancreatitis. The possible relationship of these two entities is discussed.

The administration of 8 mEq of sodium lactate per kilogram of body weight, which failed to produce alkalosis or alkaline urine, was followed by peritoneal dialysis which effected removal of 500 mg of salicylate.

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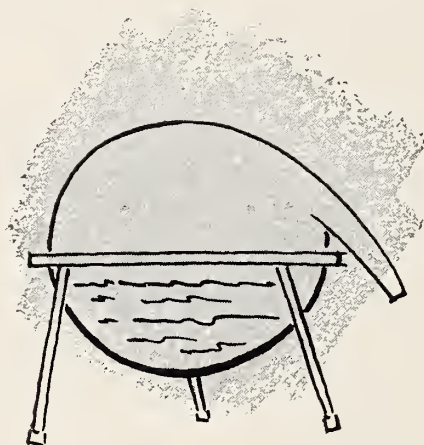
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## EDITORIAL

### The A.M.A. Session

THE 112th Annual Session of the American Medical Association was held in Atlantic City, New Jersey, the latter part of June and, as usual, attracted a huge crowd.

More than 36,000 participants were registered, including about 13,000 physicians. Others registered included family members, exhibitors, those in allied fields and guests from many of the nations of the world.

Atlantic City provided delightful weather, most acceptable even to those Californians who are conscious of climatic changes between the Pacific and Atlantic coastlines. The city also provided its huge convention facilities in the shape of its famed Boardwalk hotels, its numerous motels in the convention area and its tremendous convention hall, which housed all scientific and industrial exhibits as well as an art exhibit and many other features.

From all angles this meeting must be termed an outstanding success. It witnessed the elevation of Doctor Edward R. Annis of Miami as the new president of the A.M.A., it saw the inauguration of a new program of medicine and religion and it approved changes in the Board of Trustees, the governing body of the association.

The usual array of scientific sessions, catering to all aspects of the practice of medicine, was staged in a manner consistent with the high standards developed over the years. Papers by outstanding speakers were available for the general practitioner and for specialists in any particular field.

Scientific exhibits brought forth the latest developments in the fields of therapy, research and investigational fields. Industrial exhibits numbering into the hundreds displayed the latest developments in pharmaceuticals, equipment and techniques and, as usual drew throngs of viewers. Again, as in the past few years, special hours were set aside when only physicians were admitted to the exhibits. The "greatest medical show on earth" has become so popular that this restriction has been necessitated.

On the policy-making and business side of the meeting, the House of Delegates was called upon to rule on a wide variety of subjects, some new and some as a review of past actions. The California Medical Association, which sends its Delegates and Alternate Delegates to this session, was again very much in the forefront of the activities of the House.

California now has 21 Delegates in the House and an equal number of Alternates. In addition, four of the Delegates representing the scientific sections are Californians. This represents a large body of power in a House which this year registered 226 votes.

California's delegation at the June meeting was primarily interested in two projects. First was the enlargement of the Board of Trustees of the A.M.A., which for years has consisted of nine elected trustees plus specified officers. Second was the candidacy of Doctor Dwight L. Wilbur for membership on the enlarged board. Both these objectives were successfully completed, Doctor Wilbur having been elected without opposition to a three-year term on the expanded board.

The original request for enlargement of the board came from California two years ago. No action was taken on California's resolution at that time but a special ad hoc committee of the house was named to study the proposal and bring in recommendations. The report of this committee was made a year ago. It suggested that twelve, rather than nine, trustees be elected by the House of Delegates and that the President, President-Elect and immediate Past President also be seated as voting members of the board. It also proposed that the term of office of the elected board members be three years, with a maximum of three terms, rather than a maximum of two five-year terms.

Suitable amendments to the constitution and by-laws were introduced a year ago and brought up for vote in the November, 1962, meeting. All were given a two-thirds vote of those voting but the amendments to the constitution, which required a



two-thirds vote of all members of the House of Delegates registered at the meeting, failed by a few votes of the required number.

These same amendments drew more than the required two-thirds vote at the 1963 meeting.

Thus the Board of Trustees now numbers 15 voting members and lists the Speaker and Vice-Speaker as ex-officio members without the right to vote.

Five of California's delegates were honored by appointment on reference committees of the House of Delegates, one as chairman. All members of the delegation were kept busy attending reference committee meetings and working toward the accomplishments of the goals of the delegation for the meeting. They were cheered by the election of Doctor Norman A. Welch of Boston as President-Elect, Doctor Milford O. Rouse of Dallas as Speaker of the House and Doctor Donovan Ward of Dubuque, Iowa, as Vice-President.

The House of Delegates also took a number of actions on questions, including compensation of interns and residents, election of section representatives in the scientific sections rather than by appointment, establishment of an institute for biomedical research, initiation of an A.M.A. pension program under Keogh Law provisions, and the use of tobacco. On the last-named, the House of Delegates approved a report calling for instruction of young persons on the physical effects of toxins, including tobacco. The report was noteworthy in avoiding any cause-and-effect reflections.

Full reports on the actions of the A.M.A. at this meeting will be reported in detail in the *Journal A.M.A.* and members are urged to follow them in that medium.

In brief, the 112th annual meeting of the American Medical Association was smooth, productive and satisfying to the bulk of the state representatives present, including those from California.

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## Reporting Drug Dangers

AN HONORED THEOREM in medicine is that all useful drugs are also dangerous. Physicians have to be constantly alert for untoward reactions to any drug they prescribe, observing not only their own patients but scanning the literature for reports by investigators in all branches of medical practice and research.

CALIFORNIA MEDICINE, as a unit in that reporting system, has from time to time printed articles or other material containing warning notes with regard to one drug or another. A notable example is the editorial on chloramphenicol which was written by Dr. Ralph O. Wallerstein and published in the September 1962 issue. In future it will print ap-

propriate notes of warning that are to be prepared as occasion warrants by the Committee on Dangerous Drugs and the Committee on Scientific Information of the Scientific Board.

A more elaborate, more comprehensive service of the same order is being developed by the American Medical Association. Its new Central Registry of Reactions to Drugs and Chemicals has been established to receive reports of adverse drug reactions from all available sources, including individual physicians. The Registry will evaluate the reports and inform the medical profession promptly of potential dangers.

It is just such information services as these that the California Senate in April of this year recommended be formally organized within the structure of the medical profession. (See page 73.)

The recommendation is one with which we can and do enthusiastically cooperate.

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## Dr. Blain's Influence

IN THE FEW YEARS he served as Director of California's Department of Mental Hygiene, Doctor Daniel Blain by persuasion and exertion of influence did a great service to the mentally ill, to their relatives, to the private practice of medicine, to the people of the state at large and to the cause of humanity.

This he did by prosecution of the thesis that in general the mentally ill get well faster and return to useful occupation sooner if they can be treated in hospitals close to home than if they are sent to remote institutions. Doctor Blain recognized the value of not interrupting the care of such persons by the physicians who normally would treat them and he appreciated the morale factor of keeping a patient in his own community, conveniently among the people whose visits are likely to help restore him to health.

At a time when decisions had to be made between more and bigger state institutions and the provision of care for the mentally ill in their own neighborhood by their own physicians, Doctor Blain did much to swing the choice toward the latter.

Not long before he resigned his post for personal reasons, Doctor Blain made a report to the Council of the California Medical Association which makes interesting and most heartening reading. (See page 70.)

The medical profession in California regrets the departure of this able, energetic man from the service of our state. It at once wishes him well and expresses its pleasure in the appointment of his assistant, Doctor Daniel Lieberman, whose views accord with those of his former chief, to the vitally important post of Director of the Department of Mental Hygiene.

# The President's Page



*Dwight L. Wilbur was unanimously elected for a three-year term on the Board of Trustees to the American Medical Association on June 20, 1963. Rather than go into a complete new recapitulation of his talents and abilities, I am herewith repeating the nominating speech:*

AS PRESIDENT of the California Medical Association, I am certain it comes as no surprise to the members present in the House today that I appear before you to honor a great physician, a great name in American Medicine—a man whom it is my good fortune to count as a fellow practicing physician and an esteemed friend.

I speak, of course, of Doctor Dwight L. Wilbur. It is my privilege to present his name before you as a nominee for the three-year term as Trustee of the American Medical Association.

An illness prevents his attendance at this meeting of the House, but his absence permits me to give you a few words of Doctor Wilbur's background, his medical training and his service to American medicine. Had Doctor Wilbur been here today, I fear he'd object to my listing some of these facts and the reminder to you all that both *Dwight* and *Wilbur* are names that have been especially associated before this body with good medicine and better medical care for the American people—Doctor Dwight Murray and Doctor Ray Lyman Wilbur.

Doctor Ray Lyman Wilbur, the father of the man whose name I offer you, was president of our American Medical Association in 1923—the year Dwight Wilbur was graduated from Stanford University.

In addition to being the second president of Stanford University, Doctor Ray Lyman Wilbur had the honor of serving as Secretary of the Interior under another Stanford graduate—Herbert Hoover.

Dwight Wilbur, following his pre-medical education at Stanford, received his M.D. degree from the highly respected University of Pennsylvania in 1926.

He next went on to become a fellow in the Department of Medicine of the Mayo Clinic and then came to San Francisco where he entered the private practice of medicine in 1935. He has been a member of the American Medical Association House of Delegates since before World War II but during the war years served in the United States Navy and now has the rank of captain in the Reserve Medical Corps.

Meanwhile, he has served on scientific committees of the California Medical Association and is now a member of the A.M.A.'s Council on Medical Education and Hospitals. In California he organized the Scientific Board of the California Medical Association.

Nationally he is probably best known as a past president of the American College of Physicians.

In California he serves as an ex-officio member of our Board of Trustees by reason of his long and outstanding editorship of our monthly publication, *CALIFORNIA MEDICINE*.

Truly then, Dwight is one of us . . . truly a man of medicine; a man of demonstrated professional abilities and qualifications.

Like another Californian named *Dwight*—our beloved Doctor Murray, a president of the A.M.A. from 1956 to 1957—Dwight L. Wilbur, with a proven background of devotion, dedication, experience and ability, is certain to serve us well. It is with the unanimous backing, of course, of our delegation, and with the enthusiastic encouragement of many others in this House, that it is my privilege to give you—and our revered profession—the name of Doctor Wilbur.

SAMUEL R. SHERMAN, M.D.



# California MEDICAL ASSOCIATION

## NOTICES & REPORTS

### Transactions of the House of Delegates

Los Angeles, March 23 to 27, 1963

*Note: The following report of the transactions of the House of Delegates of the California Medical Association is selected and abridged. A complete transcript of all proceedings is on file in the Association office in San Francisco and available for the inspection of all members.*

#### REFERENCE COMMITTEES

COMMITTEES APPOINTED by Speaker James C. Doyle at the first meeting of the House of Delegates Saturday evening, March 23, were as follows:

*Committee on Credentials:* Robert M. Dorn, Beverly Hills, chairman. (In order to speed up registration two boards were appointed, one board to deal with registration of the county delegations starting with "A" through "L," the other starting with "M" and going through "Z" and also dealing with registration of the Past Presidents and Councilors.

A through L Board: Herbert Kirchner, Los Angeles; Bennett W. Kantola, Los Angeles; Walter W. Hopps, Jr., Los Angeles; Robert A. Weber, Los Angeles; and Dorothy J. Marsh, Los Angeles.

M through Z Board: Gilbert A. Webb, San Francisco; Sam Peck, San Diego; James Armstrong, Oakland; Orrin S. Cook, Sacramento; John R. Person, Riverside; Margaret Henry, San Francisco; Richard Preston, Santa Ana; and Luke F. Crutcher, San Bernardino.

*Reference Committee 1.* (This committee reviews the reports of the officers, the Council, the commissions, and standing and special committees.) George K. Herzog, Jr., San Francisco, chairman; Donald H. Abbott, Riverside; Dudley M. Cobb, Jr., Los Angeles; J. Gordon Epperson, Oakland; Clarence T. Halburg, Jr., San Bernardino; and Stanley J. Kirk, San Luis Obispo, alternate.

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SAMUEL R. SHERMAN, M.D. . . . . President  
JAMES C. DOYLE, M.D. . . . . President-Elect  
WILLIAM F. QUINN, M.D. . . . . Speaker  
IVAN C. HERON, M.D. . . . . Vice-Speaker  
CARL E. ANDERSON, M.D. . . . Chairman of the Council  
BURT L. DAVIS, M.D. . . . Vice-Chairman of the Council  
MATTHEW N. HOSMER, M.D. . . . Secretary  
DWIGHT L. WILBUR, M.D. . . . . Editor  
HOWARD HASSARD . . . . . Executive Director  
JOHN HUNTON . . . . . Executive Secretary  
General Office, 693 Sutter Street, San Francisco 2 • PProspect 6-9400  
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1515 N. Vermont Avenue, Los Angeles 27 • 663-8071

*Reference Committee 2.* (This committee on finance reviews the reports of the secretary, executive secretary and studies and makes recommendations to the House of Delegates on the budget submitted by the Council and the amount of dues for the ensuing year.) Stanley R. Truman, Oakland, chairman; Walter F. Carpenter, San Diego; Ian Macdonald, Los Angeles; Albert G. Clark, San Francisco; Carl E. Horn, Sacramento; and Norman C. Fox, San Bruno, alternate.

*Reference Committee 3.* (This committee considers new and miscellaneous business.) Charles E. Grayson, Sacramento, chairman; Harold Miles, Santa Barbara; Joseph F. Boyle, Los Angeles; Howard W. Lindsey, San Mateo; Harold Kay, Oakland, and Frank H. Robinson, Chula Vista, alternate.

*Reference Committee 3A.* (To consider business of Committee 3 when the volume becomes too great for one committee to handle.) William L. Argo, Fresno, chairman; George S. Buehler, Whittier; William K. Hohn, San Diego; H. Dean Hoskins, Oakland; and Robert B. Smalley, Willits.

*Reference Committee 3B.* (This committee also is a supplement to 3 and 3A.) Roger C. Isenhour, San Diego, chairman; Clyde Boice, Palo Alto; Nicholas V. Oddo, Long Beach; Robert F. Schell, San Rafael; Charles W. Leach; and Francis J. Baker, North Hollywood, alternate.

*Reference Committee 4.* (This committee considers amendments to the Constitution and Bylaws.) Walter H. Brignoli, St. Helena, chairman; Robert L. Watson, Los Angeles; Thomas E. Hanigan, Santa Ana; Chester E. Herrod, San Francisco; Ralph M. King, La Mesa; and Robert L. Day, Bakersfield, alternate.

*Reference Committee on California Physicians' Service.* Willard J. Newman, Sonoma, chairman; Henry A. Brown, San Mateo; Samuel Gendel, Ana-

heim; Donald R. Fitch, Glendale; Richard L. Taw, Los Angeles; and Edward J. Twigg, Walnut Creek, alternate.

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#### PRESENTATION OF FIFTY-YEAR AWARDS

Pins commemorative of 50 years of membership in the California Medical Association have been presented to the following physicians:

Ernest G. Butt, Los Angeles County  
Martin G. Carter, Los Angeles County  
Walter Wessels, Los Angeles County  
Frederick S. Kroll, San Francisco County  
F. R. Mugler, Sr., San Luis Obispo County  
Gifford Sobey, San Luis Obispo County  
Rollin Reeves, Monterey County.

' ' '

#### STUDENT A.M.A. REPRESENTATIVES

The representatives from California medical schools to the Student American Medical Association were introduced:

*From the California College of Medicine:* Fred Fowler and Fred Cox.

*From the University of California, Los Angeles:* Charles E. Lewis, Jr., and Richard Coult.

*From Loma Linda University School of Medicine:* Philip Lindsay and John Hodgkin.

*From Stanford University School of Medicine:* John Petricciani and Nathan Mayl.

*From the University of California, San Francisco:* Jerry Jorgensen and Dennis Casciato.

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#### WOMAN'S AUXILIARY

Mrs. Floyd K. Anderson, president of the Woman's Auxiliary, reported on the activities in her year of tenure.





# ACTION ON RESOLUTIONS

NINETY-NINE RESOLUTIONS were presented to the 1963 House of Delegates and referred to six reference committees. All were reported back to the House for action and in most instances were approved or were rejected without argument from the floor. One was tabled, albeit with no possibility of lifting it from the table with the final adjournment of the House.

All resolutions are shown below, by number, title, author, representation of the author and action taken. Where amendments to original resolutions were offered by the reference committee or from the floor, and adopted, the resolutions as printed show these amendments.

Resolutions not adopted show the topic, author and action only. Since these did not represent positive actions, the language of defeated resolutions is not shown. Actual language will be available in the Association office in the form of a transcript of the entire session. Those interested in the wording of resolutions not approved by the House of Delegates will have access to the original language by this means.

## LIAISON WITH STATE BOARD

### Resolution No. 1 1963

Author: San Francisco Delegation

WHEREAS, personal and public health depends on the education, skill and integrity of individual physicians; and

WHEREAS, it is a function and a responsibility of medical societies to define and to maintain high standards of education, skill and integrity; now, therefore, be it

**Resolved:** That the House of Delegates of the C.M.A. urge the state legislature to modify the Business and Professions Code under which physicians are licensed so that: The California State Board of Medical Examiners, in the public interest, and in addition to its present obligations, shall have the duty and the authority to revoke the license to practice medicine of any physician provided only that: such revocation has been recommended by the Board of Medical Examiners after appropriate and constitutional review at each level by

1. The local medical society of the community in which the licensee practices;

2. The Judicial Commission of the California Medical Association;

3. The Council of the California Medical Association.

Such recommendation shall be made when physi-

cians habitually violate local society or C.M.A. ethics as defined in their codes.

**ACTION:** *Refer to Council—report at next meeting. (See also No. 35)*

## OFFICIAL NAMES FOR PRESCRIPTION DRUGS

### Resolution No. 2 1963

Author: San Francisco Delegation

WHEREAS, quality control, utilization of official names, ethical advertising, distribution, avoidance of contaminations, etc. are pharmaceutical problems of paramount interest to the people of the United States and to their physicians; now, therefore, be it

**Resolved:** That the C.M.A. delegation recommend to the A.M.A. House of Delegates formation of an appropriate body to study these subjects on a national scale.

**ACTION:** *Approved and referred to A.M.A. Delegates.*

## DUES

### Resolution No. 3 1963

Author: San Francisco Delegation

**ACTION:** *Not adopted by House.*

## INSURANCE FOR HANDICAPPED

### Resolution No. 4 1963

Author: San Francisco Delegation

WHEREAS, many partially handicapped and persons with mild chronic illnesses are refused employment by large corporations solely because of possible hazard to group health and accident programs; now, therefore be it

**Resolved:** That research be instituted by the C.M.A. to implement the cooperation of personnel management in joining together to so cover these persons through a C.P.S. or similar insurance program as to facilitate their employment.

**ACTION:** *Approved and referred to Council.*

## SCREENING PROCEDURES

### Resolution No. 5 1963

Author: San Francisco Delegation

WHEREAS, voluntary health agencies and now even commercial and governmental groups have drives for screening purposes for the public; and

WHEREAS, sometimes their procedures are not medically appropriate, frequently misleading, give a false sense of security and have other deleterious effects; and

WHEREAS, no principles, standards or proper procedures have been developed to date as guidelines for such programs; now, therefore, be it

**Resolved:** That the C.M.A. immediately establish such principles, standards and procedures for the protection of the public; and be it further

**Resolved:** That as some of these screening programs are nationwide, the C.M.A. delegation should present the problem to the A.M.A. for prompt implementation of similar nationwide standards.

**ACTION:** *Adopted and referred to Commission on Community Health Services and A.M.A. Delegates.*

#### DEFINITION OF TERMS

Resolution No. 6 1963

Author: Second District

WHEREAS, there has developed some difference of interpretation of the meaning of the terms "usual, customary, and reasonable" when used in connection with prepayment health insurance programs; and

WHEREAS, California Physicians' Service, certain insurance companies, the State Insurance Commissioner and the courts are now using the terms "usual, customary, and reasonable" without specific definitions; now, therefore, be it

**Resolved:** That in order to clarify the meaning of each of these terms, the following definitions shall be considered as those officially approved by this House of Delegates of the California Medical Association:

1. *Usual.* The "usual" fee is that fee usually charged for a given service by an individual physician to his private patients (i.e., *his own usual fee*);

2. *Customary.* A fee is "customary" when it is within the range of usual fees charged by physicians of similar training and experience for the same service within that same specific and limited geographical area (socio-economic area of a metropolitan area or socio-economic area of a county);

3. *Reasonable.* A fee is "reasonable" when it meets the above two criteria and in the *opinion* of the responsible medical association's *review committee* is justifiable considering the special circumstances of the particular case in question.

**ACTION:** *Adopted by House.*

#### PROBLEM OF MULTIPLE INSURANCE COVERAGE

Resolution No 7 1963

Author: Second District

WHEREAS, many individuals have multiple coverage for Medical, Surgical and Hospital costs with various insurance carriers; and

WHEREAS, individuals may collect from their group insurance, their spouse's insurance and from

medical coverage carried as part of automobile insurance; and

WHEREAS, this increases the overall cost of insurance coverage and encourages some patients to malingering with the expectation of making money out of their illness; and

WHEREAS, the Foundation for Medical Care has called this to the attention of the insurance industry, the California Insurance Commissioner's office; and

WHEREAS, this can be expected to become an ever increasing problem as more employers buy group insurance as a fringe benefit for their employees; now, therefore, be it

**Resolved:** That the C.M.A. use its experience and knowledge and, through its appropriate committee, extend every cooperation to the Health Insurance Council and other organizations to eliminate any excessive expense or inequities arising as a result of multiple insurance coverage.

**ACTION:** *Adopted as amended (above) and referred to Commission on Medical Services.*

#### C.P.S. LIAISON WITH C.M.A. COUNCIL

Resolution No. 8 1963

Authors: Carl E. Anderson and John G. Morrison

Representing: C.M.A. Council and C.P.S. Board of Trustees

WHEREAS, this Association created C.P.S. in order to provide a mechanism through which the fundamental concepts of a free medical profession could find expression in the area of financing the cost of medical care, and through which criteria could be established which would also serve as guidelines to other prepayment organizations; and

WHEREAS, C.P.S.'s continued effectiveness as an integral part of medicine's organized structure requires its responsiveness to the objectives and the policies of our association; and

WHEREAS, the political and economic climate of our times often calls for swift and thoroughly coordinated action; now, therefore, be it

**Resolved:** That the unity of purpose and action of C.P.S. and its parent organization, the C.M.A., be strengthened at the policy-making level through the appointment of the chairman of C.P.S.'s Board of Trustees to an advisory and liaison position to the Council of the C.M.A.

**ACTION:** *Adopted by House.*

#### LIAISON WITH COMPONENT SOCIETIES

Resolution No. 9 1963

Author: John G. Morrison

Representing: C.P.S. Board of Trustees

WHEREAS, this House requested California Physicians' Service at its last Annual Meeting, through



Resolution No. 51, to consult with County Societies in conjunction with negotiations affecting major contracts in the respective counties; and

WHEREAS, the intent of this resolution has been effectively implemented by California Physicians' Service with the full cooperation of the component societies; and

WHEREAS, the wisdom of this resolution has been amply demonstrated by the harmony and coordinated effort which this exchange of information and awareness of mutual problems has generated; and

WHEREAS, C.P.S.'s ability to reflect the doctor's viewpoint within its prepayment mechanism is greatly aided and stimulated by such efforts; and

WHEREAS, the C.P.S. Board of Trustees expressed its appreciation to this House for the initiative it took in proposing this method of local consultation; now, therefore, be it

**Resolved:** That the County Societies and C.P.S. be encouraged to pursue forcefully the continuous liaison thus established.

**ACTION:** *Adopted by House.*

#### C.P.S. AS FISCAL AGENT

##### Resolution No. 10 1963

Author: John G. Morrison

Representing: C.P.S. Board of Trustees

WHEREAS, this Association has consistently held that participation of physicians or their designated administrative mechanism is an integral and indispensable component in the design, control and operation of any medical care programs which government finances for those unable to pay for their care; and

WHEREAS, it is evident that wherever this principle has been carried out it has safeguarded the interests of a free medical profession, as well as those of the patient and of the taxpayer; and

WHEREAS, continuous involvement in the administrative process on the part of a physician-designated mechanism is the only practical means by which the common interests of physicians can be promoted at the many levels of immediate or long-range concern to our profession; and

WHEREAS, this statewide responsibility has been entrusted by this Association to its fiscal arm, C.P.S.; now, therefore, be it

**Resolved:** That it be the publicly expressed policy of this Association that, wherever permissible by law or regulation, C.P.S. or other professionally oriented prepayment plans be the fiscal agent between government and the individual physician under any categorical aid or welfare program financed by government; and be it further

**Resolved:** That this essential physician participation be achieved either through prepayment or fiscal agency arrangements.

**ACTION:** *Adopted as amended (above).*

#### EPILEPSY AND CRIPPLED CHILDREN SERVICES

##### Resolution No. 11 1963

Author: Stanley A. Skillicorn

Representing: Santa Clara County

**ACTION:** *Not adopted by House.*

#### RESTRICTIONS ON THE USE OF THE DRUG PERCODAN

##### Resolution No. 12 1963

Author: Stanley A. Skillicorn

Representing: Santa Clara County

WHEREAS, there are conflicting and confusing views being circulated as to the potential dangers of addiction resulting from the commonly prescribed drug Percodan; and

WHEREAS, there is presently a Bill before the State of California Legislature, passage of which would require that Percodan be prescribed only on triplicate narcotic forms; and

WHEREAS, California physicians, without full knowledge of up-to-date information concerning this drug, are presently being solicited individually to sign petitions calling for defeat of the Bill before the State Legislature; and

WHEREAS, the C.M.A. Committee on Dangerous Drugs has current and pertinent information concerning this drug; now, therefore, be it

**Resolved:** That the controversial aspects of the drug Percodan be thoroughly explored at this session of the House of Delegates including a report from the C.M.A. Committee on Dangerous Drugs; and be it further

**Resolved:** That this 1963 House of Delegates establish a definitive recommendation for or against the proposal that the drug Percodan be subject to the legal restrictions for narcotic drugs, including the use of triplicate prescription forms; and be it further

**Resolved:** That this recommendation then be transmitted to the C.M.A. Legislative Committee for appropriate action.

**ACTION:** *Referred to the Council.*

#### SURGICAL ASSISTANTS' FEES

##### Resolution No. 13 1963

Author: Arthur F. Howard

Representing: Fresno County

WHEREAS, the Relative Value Studies have been a useful guide in the determination of surgical and surgical assistant fees; and

WHEREAS, certain exceptional surgical cases require considerably more time than the usual; and

WHEREAS, the Assistant, unlike the Surgeon, cannot average out the long and short cases of similar nature; now, therefore, be it

**Resolved:** That the Committee on Fees be directed to consider the revision of the Relative Value Studies so that the Assistant Surgeon's Fee would be determined on the basis of 15 per cent of the Surgical fee or by a formula similar to that used to determine the Anesthesiologist's fee.

**ACTION:** *Referred to Committee on Fees.*

#### STATE MEDICAL CARE PROGRAMS

Resolution No. 14     1963

Author: Ad Hoc Committee No. 2

**Resolved:** That the California Medical Association reaffirm its belief that all programs including government subsidized medical care programs should include (a) the fee-for-service principle and (b) the free choice of physician principle; and be it further

**Resolved:** That C.M.A. accept the legal definition of indigency as defined by society, but continue to press for realistic legislation in this concept and encourage its members as individual citizens to interest themselves in such legislation; and be it further

**Resolved:** That C.M.A. should recommend that fees paid by government for medical services should be at the usual and customary amounts paid by the public generally; and be it further

**Resolved:** That C.M.A., through its appropriate committees, continue to study methods by which this usual and customary rate can be defined and identified, including regional variations where substantiated; and be it further

**Resolved:** That C.M.A. recognize the present legal necessity for "vendor" payment for medical care rendered to certain welfare patients, but continue to urge the development of programs based on the purchase of health insurance, with the possibility of recipient payment, for all classes of citizens for which government undertakes to provide medical care, in order to abolish the socially undesirable differentiation between indigent and non-indigent persons; and be it further

**Resolved:** That the function of C.M.A., in government programs, shall be to serve as consultant and advisor—not as negotiator or bargainer; and be it further

**Resolved:** That C.M.A. limit its actions in state fee schedules to recommendations as to levels and relative values of fees which it believes will secure widespread participation and scope of high quality

medical care for wards of government; and be it further

**Resolved:** That C.M.A. continue to maintain an active working liaison with all agencies of local, state or federal government which provide medical services, as long as an attitude prevails of seeking (a) solutions for the common good of all (including doctors) and (b) sound medical care, with dignity, for the indigent and other government wards; and be it further

**Resolved:** That the Council, through its appropriate committees, continue to explore and develop opportunities for recipient payment in government and insured plans, to include opportunity for assignment of benefits, or to include the opportunity for payment by joint checks, at the option of the attending physician; and be it further

**Resolved:** That C.M.A. continue to use all possible methods to stimulate provision of high quality medical care to all patients regardless of source or level of fees.

**ACTION:** *Adopted by House as amended (above).*

#### VOLUNTARY HEALTH INSURANCE

Resolution No. 15     1963

Author: Ad Hoc Committee No. 2

**Resolved:** That C.M.A. continue its support and encouragement of all types of experimentation in voluntary health insurance, whether "service," "indemnity" or a combination thereof, which can assist people to meet the cost of high quality medical care.

**ACTION:** *Adopted by House.*

#### PHYSICIAN PARTICIPATION IN MEDICAL CARE PROGRAMS

Resolution No. 16     1963

Author: Ad Hoc Committee No. 2

**Resolved:** That C.M.A. reassure each member of his complete freedom to participate or to refrain from participation, in any medical care program as he individually chooses; and be it further

**Resolved:** That C.M.A. exert no pressure to stimulate his participation above and beyond that which is dictated by his professional conscience.

**ACTION:** *Adopted by House as amended (above).*

#### USUAL FEE INDEMNITY PLAN

Resolution No. 17     1963

Author: Ad Hoc Committee No. 2

**Resolved:** That the Council through its appropriate committees continue efforts to stimulate development of usual fee indemnity programs in California; and be it further



**Resolved:** That efforts be continued to develop composite fee lists of usual and customary fees, which bind no individual doctor, but which can guide any insuring or governmental agency.

**ACTION:** *Referred to Commission on Medical Services.*

#### INDIVIDUAL RESPONSIBILITY

Resolution No. 18 1963

Author: Ad Hoc Committee No. 2

**Resolved:** That C.M.A. is in agreement with the concept and principle of individual responsibility; and be it further

**Resolved:** That C.M.A. recognize the value of this concept in preventing control by third parties of the practice of medicine; and be it further

**Resolved:** That C.M.A. encourage its member societies to gain further experience with the applied concept of individual responsibility.

**ACTION:** *Adopted by House.*

#### RECOMPENSE TO HOUSE OFFICERS IN HOSPITALS

Resolution No. 19 1963

Author: Sonoma Delegation

WHEREAS, in the last decade, there has been a declining trend in the number and quality of applicants for admission to American medical schools; and

WHEREAS, there is abundant evidence that important factors partially responsible for this trend are the long periods of internship and residency training at low pay; and

WHEREAS, nationwide surveys have shown that average starting salaries for engineering graduates employed by industry in 1961 were \$540 per month with a Bachelor's degree and \$870 per month with a Ph.D. degree; and

WHEREAS, for the year 1961-1962, the average monthly salary of internes in the U.S.A. was \$233 and of first year residents \$275; and

WHEREAS, the A.M.A. Council on Medical Education and Hospitals and Council on Medical Service recommend that fees from paying hospital patients for assigned care performed by members of the house staff be used exclusively in support of interne and resident training programs, including salaries for house officers; now, therefore, be it

**Resolved:** That in the interest of fairness to young doctors and to the society which they serve, the salaries of internes and residents should be made commensurate with their progressive skills, training and high purposes; and be it further

**Resolved:** That this increased cost be the responsibility of the hospital and should never include

any fees collected for services performed by these internes and residents; and be it further

**Resolved:** That the principles of this resolution be transmitted immediately to the Council on Medical Education and Hospitals and the Council on Medical Service of the A.M.A.

**ACTION:** *Adopted as amended (above).*

#### COORDINATION OF PARAMEDICAL EDUCATION EFFORT

Resolution No. 20 1963

Author: William J. Newman

Representing: Sonoma County

WHEREAS, the numerous organizations concerned with the wide field of technical assistant recruitment and training, or preparation for some of the categories of the needed medical supporting personnel show a demonstrable lack of over-all coordination of common interest and effort; and

WHEREAS, the maintenance of high standards for the private practice of medicine depends substantially upon the selection of candidates, training and indoctrination of this important segment of the healing arts team; now, therefore, be it

**Resolved:** That the Council of the California Medical Association designate and empower such Committees or Commissions or individuals as necessary to develop a consistent program for recruitment, uniform training and clinical experience requisite to insure the production of the highest quality of medical services to the public; and be it further

**Resolved:** That an initial sum adequate for the initiation of this program be allocated for defraying expenses incidental to interdisciplinary conferences, secretarial and information collection services; and be it further

**Resolved:** That a progress report be rendered to the House of Delegates at its Annual Session.

**ACTION:** *Referred to Scientific Board.*

#### C.P.S. CLAIMS FORMS

Resolution No. 21 1963

Author: San Mateo Delegation

**Resolved:** That California Physicians' Service be asked to accept from member physicians those forms other than the present C.P.S. form which provide adequate information for processing, such as the form approved by the Health Insurance Council and comparable forms.

**ACTION:** *Referred to C.M.A.-C.P.S. Liaison Committee.*

## C.P.S.-RECIPIENT PAYMENTS

### Resolution No. 22 1963

Author: San Mateo Delegation

**Resolved:** That C.P.S. be asked to study the feasibility of changing some or all of its programs from vendor to recipient payment, with the option of assignment to be decided between the doctor and the patient.

**ACTION:** *Adopted by House.*

## LABELING OF PRESCRIPTIONS

### Resolution No. 23 1963

Author: John T. Saidy

Representing: San Mateo County

WHEREAS, the practice of medicine has changed considerably in the past two decades, and most medication is *no longer* compounded by the local pharmacist; and

WHEREAS, many physicians are handicapped if they are faced with an *unlabeled* prescription in an emergency; and

WHEREAS, it is more *economical* if medication is always labeled; and

WHEREAS, many patients are *allergic* and should know at all times what they are taking; and

WHEREAS, the family doctor in particular *must* know all medication his patient is taking; and

WHEREAS, we now have a mobile population who are often taken care of by more than one physician; now, therefore, be it

**Resolved:** That the C.M.A. institute an educational program to bring to the attention of its members the importance of having pharmacists label prescriptions as to their content, strength and amount; and be it further

**Resolved:** That the C.M.A. acquaint the state pharmaceutical associations, through proper channels, of the purposes behind this resolution.

**ACTION:** *Adopted by House as amended (above).*

## RECIPIENT PAYMENT FOR MEDICAL INSURANCE

### Resolution No. 24 1963

Author: San Mateo Delegation

**ACTION:** *Not adopted by House.*

## IMPLIED CONSENT LAW

### Resolution No. 25 1963

Author: Alameda-Contra Costa Delegation

WHEREAS, evidence is accumulating that intoxicated drivers and pedestrians are involved to a great extent in traffic deaths and injuries; and

WHEREAS, in California drivers can refuse to submit to chemical tests, physicians are reluctant to

take blood because "knowing consent" must be obtained, police officers are discouraged from charging other than the most obviously drunk drivers, and the courts often use a much higher level of alcohol as the indication of driver impairment than has been established on sound medical evidence; and

WHEREAS, these barriers could be substantially reduced by California's adoption of an Implied Consent Law such as that which has been in effect since 1953 in New York; now, therefore, be it

**Resolved:** That the House of Delegates of the California Medical Association endorse and work toward the adoption of an implied consent law for the drawing of blood for the determination of alcoholic content of persons under arrest or detention for suspicion of alcoholic intoxication while driving an automobile.

**ACTION:** *Adopted as amended (above) and referred to Committee on Legislation.*

## USE OF RELATIVE VALUE STUDIES BY INSURANCE CARRIERS

### Resolution No. 26 1963

Author: Alameda-Contra Costa Delegation

**Resolved:** That the California Medical Association urge all insurance carriers selling health insurance to add to the comprehensiveness of their contracts by adopting the terminology, classifications, and relative values of the current C.M.A. Relative Value Studies.

**ACTION:** *Adopted by House.*

## MEDICAL REPORTING FORMS

### Resolution No. 27 1963

Author: Alameda-Contra Costa Delegation

**Resolved:** That the California Medical Association deplores the practice of governmental agencies and insurance companies asking that physicians certify to the fitness for driving of an individual over 65 or that an individual "should (or should not) be granted a teaching credential" or "this individual is a good insurance risk" and recommends that physicians shall set forth on such report forms only actual data concerning a patient's medical condition, and professional opinions only on the patient's physical condition.

**ACTION:** *Adopted as amended (above).*

## CLAIMS REVIEW BY INDUSTRIAL ACCIDENT CARRIERS

### Resolution No. 28 1963

Author: Alameda-Contra Costa Delegation

**Resolved:** That the C.M.A. advise all third parties or organizations, particularly industrial accident



carriers, of the wisdom and ultimate economies to be achieved by adhering to the following concepts:

1. All third parties or organizations financing medical care plans should utilize medical consultants for the adjudication of questionable claims and evaluation of medical services performed.

2. Physicians' claims should not be routinely and arbitrarily reduced by clerical personnel to the minimum fee.

3. Any medical bill rendered should be reviewed by a physician to evaluate the nature of the case and the medical services provided before it is reduced and the reviewing physician should sign the review.

4. The reviewing physician and parties concerned should utilize the available services of mediation committees of component medical societies in resolving problems which may arise in the course of such review.

**ACTION:** *Adopted by House as amended (above). Content of Resolution No. 31 included in this action.*

#### **QUALITY OF MEDICAL CARE IN STATE MEDICAL PROGRAMS**

**Resolution No. 29 1963**

Author: Alameda-Contra Costa Delegation

##### **Resolved:**

1. Participation in the public assistance medical care programs should be limited to those practitioners licensed as physicians and surgeons or dentists.

2. Questions concerning improper or irregular medical care rendered by a physician participating in State Medical Care programs should be evaluated by the medical society of which he is a member; it is the responsibility of professional medical organizations to study any case referred and when a physician's pattern of practice is found to deviate consistently from accepted standards of practice, the medical society should recommend suspension from participation in the program.

3. A physician's participation in State Medical Care Programs should not be suspended without consultation and review by his local medical association.

4. Administrative policy, reporting forms and fees for services rendered under State Medical Care Programs should conform as closely as possible to those of existing health insurance mechanisms through which nonindigent segments of the population receive their medical care.

**ACTION:** *Adopted by House as amended (above).*

#### **DUAL FEE SCHEDULES**

**Resolution No. 30 1963**

Author: Alameda-Contra Costa Delegation

WHEREAS, the American Medical Association is developing a classification of nonsurgical services for fee schedules; and

WHEREAS, a proposal has been made that this classification include different types of visits and examinations for each medical specialty; and

WHEREAS, this would result in different payments for similar services to doctors in various specialties and in general practice, thus creating multiple standards of practice; now, therefore, be it

**Resolved:** That the C.M.A. instruct its Delegates to the A.M.A. to oppose the adoption or approval of any classification which might provide a differential of fees for identical services performed by physicians.

**ACTION:** *Adopted as amended (above).*

#### **MEDICAL CONSULTANTS**

**Resolution No. 31 1963**

Author: Alameda-Contra Costa Delegation

**ACTION:** *See Resolution No. 28.*

#### **HEALTH INSURANCE FOR INDIGENTS**

**Resolution No. 32 1963**

Author: Alameda-Contra Costa Delegation

**Resolved:** That the California Medical Association, through its component medical societies, urges the County Boards of Supervisors of California counties to study the feasibility of purchasing insurance through Blue Shield, Blue Cross, and other private health insurance carriers, as a mechanism to provide medical care and hospitalization to indigents in each county.

**ACTION** *Adopted by House as amended (above).*

#### **COURSES FOR AMBULANCE DRIVERS**

**Resolution No. 33 1963**

Author: Alameda-Contra Costa Delegation

WHEREAS, ambulance drivers and stewards play an important part on the medical team; and

WHEREAS, adequate and proper training of ambulance personnel requires participation of the medical profession; and

WHEREAS, ambulance personnel have demonstrated their eagerness to take part in training courses conducted by Alameda-Contra Costa Medical Association designed to improve their skill and judgment in the emergency care and transportation of the sick and injured; now, therefore, be it

**Resolved:** That the California Medical Association House of Delegates urge the organization of regional training courses for ambulance drivers and stewards, to be sponsored by the California Medical Association and component societies, with the cooperation and assistance of local health authorities, ambulance companies, and fire and police departments, and that this resolution be referred to an appropriate committee of the California Medical Association for study and implementation.

**ACTION:** *Adopted by House.*

#### DOCTORS AT ATHLETIC CONTESTS

##### Resolution No. 34 1963

Author: Alameda-Contra Costa Delegation

WHEREAS, certain high school athletic leagues within the State of California require an M.D. physician in attendance at football games; and

WHEREAS, the California Medical Association approves this requirement as being in the best health and safety interests of the athletes; and

WHEREAS, under existing state regulations the attending game doctor must complete

1. Application for Credential Authorizing Public School Service in California which includes a Loyalty Oath,

2. State Health Form,

3. Two ID Cards (with fingerprints),

4. \$8.00 fee to California State Department of Education,

to be permitted to perform this service, even though it be an emergency, or single game basis; and

WHEREAS, under the existing State regulations the local school district is not permitted to pay such physicians from district funds, nor may the district cover the physician with its liability insurance policy in case of accident; now, therefore, be it

**Resolved:** That

1. the California Medical Association utilize every proper channel to have changed the responsible state regulations so that any licensed physician may be permitted to act as a team and/or game physician by virtue of the fact that he is licensed by the State of California to practice medicine, and that he not need any of the above named additional credentials or documents;

2. the physician serving as a team and/or game physician may be paid from the school district funds for this service, and

3. the physician be fully covered by the school district liability insurance for the period of his employment or contract.

**ACTION:** *Adopted by House and referred to Committee on Medical Aspects of Sports and Committee on Legislation.*

#### UNPROFESSIONAL CONDUCT

##### Resolution No. 35 1963

Author: Alameda-Contra Costa Delegation

**Resolved:** That the House of Delegates of the California Medical Association petition the state legislature to include in the Medical Practice Act—

1. The following additional types of unprofessional conduct:

a. Incompetence as a physician or surgeon;

b. Immoral conduct or unethical behavior injurious to patients; and

c. Psychiatric disability which interferes with proper management of, and therefore endangers patient.

2. Provisions authorizing the Board of Medical Examiners to suspend or revoke the license of any doctor who after formal hearings of written charges is found guilty of such forms of unprofessional conduct.

**ACTION:** *Refer to Council—report at next meeting (See also No. 1).*

#### CIGARETTE SMOKING

##### Resolution No. 36 1963

Author: Kern Delegation

**Resolved:** That the C.M.A. take steps on a state-wide basis to publicize, particularly in schools and homes, the harmful effects of cigarette smoking.

**ACTION:** *Resolutions Nos. 36, 50 and 96 were combined in above substitute resolution, adopted by House.*

#### ENCOURAGEMENT OF VOLUNTARY HEALTH INSURANCE

##### Resolution No. 37 1963

Author: San Mateo Delegation

WHEREAS, Voluntary Health Insurance is a widely used means of protecting people from the cost of illness and disability; and

WHEREAS, it is desirable to broaden the coverage to even larger groups of people; and

WHEREAS, premiums for Health and Disability Insurance should be deductible from gross income; and

WHEREAS, certain provisions of the proposed 1963 Revenue Law would restrict deductions for Health Insurance; now, therefore, be it

**Resolved:** That the C.M.A. Legal Liaison Committee to the A.M.A. be urged to press for a widening of the provisions for deducting premiums of Health and Disability Insurance from gross income.

**ACTION:** *Adopted by House. (See also Resolutions Nos. 75 and 98.)*



## LIBERTY AMENDMENT

### Resolution No. 38 1963

Author: Stanley A. Skillicorn  
Representing: Santa Clara County

WHEREAS, our public servants recognize no constitutional state guard against socialization; and

WHEREAS, governmental ability to promote and maintain socializing schemes stems from unlimited power of direct taxation; and

WHEREAS, it has been clearly established that necessary federal functions can operate without this type of taxation; and

WHEREAS, a permanent logical solution to the continuing threat of socialization would obviously be within the purview of this organization; and

WHEREAS, the American Medical Association has recognized the Liberty Amendment as within its purview; now, therefore, be it

**Resolved:** That the California Medical Association follow the leadership of the American Medical Association in accepting the Liberty Amendment as within its purview; and to promote and endorse this tax reform as a positive approach to the general and medical welfare of the American people.

**ACTION:** No action taken by House but "expressions of opinion contained in this resolution" be conveyed to C.M.A. Delegates to A.M.A.

## PROFESSIONAL CORPORATION BILL

### Resolution No. 39 1963

Author: San Mateo Delegation

WHEREAS, the physicians of California are not able to satisfactorily provide for their retirement under existing laws; and

WHEREAS, a new treatment of the legal rules guiding pension and retirement programs for physicians is needed; now, therefore, be it

**Resolved:** That the Commission on Professional Welfare continue its study of this entire matter and report to the Council; the Council to report back to the House of Delegates before the next session in a report to be sent to all members of the House of Delegates.

**ACTION:** Resolutions Nos. 39 and 87 combined and substitute resolution (above) adopted by House.

## RESOLUTION STATUS REPORTS

### Resolution No. 40 1963

Author: Tenth District

**Resolved:** That the Council of the C.M.A. forward to the author(s) of adopted or amended resolution(s) a report on the status of such resolution(s)

at least 120 days before the following meeting of the House of Delegates.

**ACTION Adopted by House.**

## IONIZING RADIATION EQUIPMENT

### Resolution No. 41 1963

Author: Tenth District

WHEREAS, it is widely accepted that every reasonable effort should be made to minimize human gonadal exposure to needless ionizing radiation, and it is known that diagnostic medical radiation accounts for approximately 90 per cent of present man-made gonadal radiation exposure; and

WHEREAS, there is currently no assurance that some persons operating medical x-ray equipment have had education or examination in the use of such; now, therefore, be it

**Resolved:** That this House of Delegates recommend that the Council take suitable steps to attain the following objectives in the public interest:

1. Education. Urge the deans of California medical schools to include in the medical curriculum instructions in the use and hazards of x-ray and other ionizing radiation sources.

2. Examination. Request the State Board of Medical Examiners to ask basic questions in this field of all candidates for licensure.

3. Regulation. After adoption of the above measures, request that the State Board of Health with the aid of the Council promote regulations requiring that medical x-ray equipment be operated only by, or under the direction and/or immediate supervision of a duly licensed physician and surgeon.

**ACTION:** Adopted by House.

## TITLES FOR CONSTITUTIONAL AND BYLAW AMENDMENTS

### Resolution No. 42 1963

Author: C. Gerald Scarborough  
Representing: Santa Clara County

WHEREAS, it is the obvious intention of all authors of all proposed amendments to the Constitution and Bylaws that their meaning be exactly, and clearly stated; and

WHEREAS, the title set forth at the top of the official form is the only quick way members of the House have of ascertaining the content and reference of the amendment without reading the whole text clear through; and

WHEREAS, the mere listing of the Chapter, Article and paragraph numbers referred to is of no value to the Delegates in quickly grasping the meaning unless a copy of the up-to-date Constitution and

Bylaws is immediately at hand—which it seldom is—: now, therefore, be it

**Resolved:**

1. That it be the sense and specific direction of this House of Delegates that in the future all Constitutional and Bylaw Amendments be titled *both* by the appropriate Chapter, Article, and paragraph numbers, *and* by a *short* written title distinctly outlining the content.

2. That if the author fails to title his amendment or titles it inappropriately, the California Medical Association office prepare and add such written title after consultation with the author.

**ACTION:** *Adopted by House as amended (above).*

**LEGISLATIVE POWERS OF HOUSE OF DELEGATES**

Resolution No. 43 1963

Author: C. Gerald Scarborough

Representing: Santa Clara County

**ACTION:** *Not adopted by House.*

**ABOLITION OF ADVISORY COUNCIL TO BOARD OF NURSING EXAMINERS AND NURSE REGISTRATION**

Resolution No. 44 1963

Author: C. Gerald Scarborough

Representing: Santa Clara County

WHEREAS, we as individual physicians, and as organized Medicine, are primarily interested in the public health and its continued improvement; and

WHEREAS, continually improving nursing education—thereby graduating improved nurses—is essential for the betterment of the public health and general health care; and

WHEREAS, the California State Nurse Practice Act creates an Advisory Council to the Board of Nursing Education and Nurse Registration on which two C.M.A. members are mandatory, thus creating a built-in liaison between C.M.A. and the official nursing educational organization in California; and

WHEREAS, the State Bureau of Finance has proposed that the Advisory Council to the Board of Nursing Education and Nurse Registration be legally abolished by amendment to the Nurse Practice Act; and

WHEREAS, this would effect only a trifling saving of tax money but would remove an important link between organized Medicine in California and official nursing in California; now, therefore, be it

**Resolved:** That this House of Delegates instruct the Council to instruct the Committee on Legislation to oppose vigorously the proposed abolition of the Advisory Council to the Board of Nursing Education and Nurse Registration both now, and when, and if, it reaches the legislative stage.

**ACTION:** *Adopted by House.*

**C.M.A. LIAISON TO OFFICIAL NURSING**

Resolution No. 45 1963

Author: C. Gerald Scarborough

Representing: Santa Clara County

WHEREAS, close relationship between organized Medicine and the Nursing profession and in particular with the Board of Nurse Education and Nurse Registration (which supervises nursing education in California) is necessary; and

WHEREAS, at present, the liaison between C.M.A. and official Nursing is loose and uncoordinated between the Committee on Other Professions, the C.M.A. Council, and two individual physicians on the Advisory Council to the Board of Nursing Education and Nurse Registration; and

WHEREAS, this liaison should be firm and strengthened rather than loose: now, therefore, be it

**Resolved:** That all C.M.A. activities and contacts with organized Nursing and with official Nursing be coordinated through the C.M.A. office so that the right hand will know what the left hand is doing; and be it further

**Resolved:** That C.M.A., through the appropriate committee, reexamine its position and policies, with an eye to greater participation in and influence on nursing education; and be it further

**Resolved:** That a report by such Committee on progress be submitted as soon as possible and in any case to this House of Delegates at the annual meeting in 1964.

**ACTION:** *Adopted by House.*

**COMMUNITY RATING**

Resolution No. 46 1963

Author: Marin Delegation

WHEREAS, voluntary prepayment is a most satisfactory method of financing medical care; and

WHEREAS, prepayment insurance premiums are based on a principle of averaging risks; and

WHEREAS, determination of premium rates of insurance by experience rating makes it difficult to include poor risk groups in the prepayment scheme because of high premium cost; and

WHEREAS, determination of premium rates based on the experience of a broad unselected segment of the population, e.g. community rating, spreads the cost more evenly and thereby makes it more nearly possible for all citizens to have coverage; now, therefore, be it

**Resolved:** That the California Medical Association endorse the principle of community rating and wherever possible encourage its use by the insurance industry.

**ACTION:** *Referred to Commission on Medical Services.*



## CRITERIA FOR GOVERNMENT ASSISTANCE

Resolution No. 47 1963

Author: Marin Delegation

WHEREAS, the United States is the only country in the world which either presently or historically has segregated a group for government financed medical assistance by other than demonstrated need; and

WHEREAS, such need is solely an economic factor and encompasses individuals of every age, race, color or creed; now, therefore, be it

**Resolved:** That the C.M.A. in all its dealings with government programs, continue to press for a realization of the concept that need should be the sole basis for offering government financed medical assistance.

**ACTION:** *Adopted by House.*

## UNIFICATION OF CATEGORICAL AID

Resolution No. 48 1963

Author: Marin Delegation

WHEREAS, categorical aid programs administered by the government at County, State and Federal levels have become numerous, and in many cases have overlapping jurisdictions; and

WHEREAS, this serves to cause much confusion in the minds of members of the medical profession and laity alike as well as causing inefficiency in administration of the programs; now, therefore, be it

**Resolved:** That the Council of the C.M.A. through its proper committees and through the California Delegation to the A.M.A. strongly support the enactment of County, State and Federal legislation designed to unify governmental assistance programs at each appropriate level.

**ACTION:** *Referred to Commission on Medical Services.*

## GOVERNMENT PURCHASE OF HEALTH INSURANCE

Resolution No. 49 1963

Author: Marin Delegation

WHEREAS, a system of helping persons of inadequate income to obtain medical care by assisting them in their purchase of private health insurance appears to offer a mechanism much more in keeping with the American way of life than our present form of direct purchase of medical care by government agencies and is one which could conceivably stimulate maximum physician participation as well as maximum quality care; now, therefore, be it

**Resolved:** That appropriate committees of the C.M.A. study the Australian Medical Care plan in depth, and modify the basic concepts of this plan which are not in harmony with our principles; and be it further

**Resolved:** That the C.M.A., through its appropriate committees and through its delegation to the A.M.A., actively encourage government bodies to provide medical care for their charges by assisting in the purchase of health insurance; and be it further

**Resolved:** That the C.M.A. endorse the principle in the care of the medically needy which will permit cash allowances for premiums for voluntary prepaid health insurance adequate to purchase sound health care. The amount of such cash allowances should be based on a sliding scale of income and be in keeping with the principle that the government at *all* levels, local, state, and national has financial responsibility in the care of the medically needy. Determination of need and administration should be at the local or state level.

**ACTION:** *Referred to Commission on Medical Services.*

## MORTALITY DUE TO SMOKING

Resolution No. 50 1963

Author: Richard F. Altman

Representing: Orange County

**ACTION:** *See Resolution No. 36.*

## ALTERING MEDICATIONS AND TREATMENT

Resolution No. 51 1963

Author: William H. Wickett, Jr.

Representing: Orange County

**ACTION:** *Not adopted by House.*

## STATE INTERFERENCE IN HOSPITAL PLANNING

Resolution No. 52 1963

Author: Orange Delegation

**ACTION:** *Not adopted by House. (See Resolution No. 53.)*

## HOSPITAL CONSTRUCTION PLANNING

Resolution No. 53 1963

Author: Orange Delegation

WHEREAS, it is in the best interest of patient care and efficiency that hospital facilities be constructed in accordance with the basic community needs for service; and

WHEREAS, California, as a result of its rapid growth, has experienced a pattern of hospital growth and expansion that has developed an availability of beds but a dislocation of the many other services and facilities and a pattern of hospital construction that has led to wide variations in occupancy ratios with resultant high costs unrelated to quality of care required for effective patient care; and

WHEREAS, the medical profession has a vital stake in assuring that the expansion of hospital facilities and services occurs in the most economical manner and in the best interest of quality of patient care and efficiency of operation without direct government intervention and control; and

WHEREAS, local voluntary planning for hospitals and related facilities by community groups sponsored by local organized medicine is in the best interest of quality patient care and efficiency of operation; and

WHEREAS, government control (at any level) over hospital planning would be a major threat of government control over the availability and quality of service; now, therefore, be it

**Resolved:** That the California Medical Association and its component medical societies and their members work with the community as a whole in cooperating with local medical society approved Hospital Planning Groups, specifically by the following:

1. Bringing to the attention of these groups gaps in existing services.
2. Assisting in the developing of statistical information necessary for a proper evaluation and projection of community needs.
3. Educating the public as to the nature of the problems and the importance of their need.
4. Assisting the approved projects to successful fruition.
5. Not participating in the financing or ownership of a new hospital project in a planning area that has not been approved by the Local Planning Group.
6. Not permitting individual names to be used by new project sponsors as endorsers until planning endorsement has been obtained from the Local Planning Group.
7. Encourage project sponsors to work with and cooperate with Local Planning Groups.
8. Sharing in the financial burden of this great voluntary planning effort.

**ACTION: Adopted by House.**

#### OVERSEAS MEDICAL MISSIONS

##### Resolution No. 54 1963

Author: Orange Delegation

WHEREAS, many physicians of the California Medical Association have a desire to assist in medical care of the deprived peoples of the world; and

WHEREAS, it is, at present, difficult for these physicians to obtain information of such service and to make contact with organizations sponsoring med-

ical service to poverty stricken and underprivileged people of the world; now, therefore, be it

**Resolved:** That the House of Delegates of the California Medical Association empower the Council of the California Medical Association to organize an official committee which shall be charged with the duty of promoting liaison between physicians of the California Medical Association and groups, sectarian and nonsectarian, who sponsor such service; and be it further

**Resolved:** That this Committee encourage and assist physicians in bringing to fruition their worthwhile desire to aid the unfortunate people of the world through medical service.

**ACTION: Referred to Council.**

#### REPORTING OF CHILD CRUELTY

##### Resolution No. 55 1963

Author: Stanley A. Skillicorn

Representing: Santa Clara County

WHEREAS, there is at present a Bill pending in the State of California Legislature (AB 534) which if passed would require physicians to report to police any case where it appears that a minor is the victim of cruelty; and

WHEREAS, such a law could result in parents purposely avoiding medical attention for their children for fear of being reported, thereby depriving children of the one thing they may need most—medical treatment; and

WHEREAS, there have been, and presently are being established in most California communities Protective Services for Children Agencies, functioning as a preventive and nonpunitive service to help families stay together and to prevent the necessity of legal action in cases of reported or suspected neglect, abuse, or deprivation of children, with the responsibility when indicated of referring the case for Court action if the family is unwilling or unable to use the help offered; and

WHEREAS, physicians always have and will continue to cooperate with the proper authorities by reporting cases of child abuse without laws requiring them to do so; and

WHEREAS, the decision as to whether a case of suspected cruelty should or should not be reported seems best left to the discretion and judgment of the individual physician and his interpretation of the circumstances in each particular case rather than on the basis of a categorical, legal dictum; now, therefore, be it

**Resolved:** That the C.M.A. Legislative Committee be instructed to actively oppose the 1963 State of California Legislative Assembly Bill 534.

**ACTION: Adopted by House.**



## SERVICE CHARGES

### Resolution No. 56 1963

Author: Leon P. Fox

*ACTION: Not adopted by House.*

## SUBJECT MATTER OF RESOLUTIONS

### Resolution No. 57 1963

Author: Richard S. Wilbur

Representing: Santa Clara County

WHEREAS, Considerable concern has been expressed as to the increased number of matters brought before this House of Delegates and its expanded Reference Committees: and

WHEREAS, Although it is commendable that members of C.M.A. as individuals be versatile and broadly informed citizens, the available time of these Reference Committees is necessarily limited; therefore, be it

**Resolved:** That a mechanism be established by this House to assist in its deliberations, such mechanism to consist of:

1. A committee shall be constituted composed of the chairmen of the several Reference Committees, with the Speaker and Vice-Speaker serving as Chairman and Vice Chairman respectively. Such committee shall be charged with the responsibility of review of submitted resolutions at appropriate intervals prior to the annual meeting of the House of Delegates.

2. Should a resolution be ruled out of order, it shall still be published and circulated in the usual manner but the decision of the committee indicated on the face of the resolution.

3. The committee will meet immediately prior to the meeting of the House of Delegates and any Delegate whose resolution has been rejected may appeal such rejection at that time.

4. If the resolution is still considered out of order and the Delegate wishes to appeal the decision to the full House of Delegates, this may be done at that point on the agenda when the Speaker of the House calls for New Business.

*ACTION: Referred to an ad hoc committee of the House of Delegates, to be named. Above resolution substituted by reference committee for original.*

## CONCERN REGARDING PROFESSIONAL ETHICS

### Resolution No. 58 1963

Author: Clyde L. Boice

Representing: Santa Clara County

WHEREAS, with increasing frequency breaches of professional ethics have occurred in our midst with

resultant lay publicity damaging to public opinion of the medical profession collectively; and

WHEREAS, the public in general is unaware of avenues through which they may register complaints with regard to alleged mismanagement, fees, etc., and further is unaware that such complaints with merit will be adjudicated confidentially and without prejudice; now, therefore, be it

**Resolved:** That through the C.M.A. Bureau on Communications and each county society's respective Public Relations Committee, information be conveyed to their members, local Bar Associations, and the general public, pertaining to the mechanism of registering grievances to appropriate committees. This may be accomplished through local news media, periodicals, and medically oriented television programs, such as Doctors News Conference and Doctors at Work.

*ACTION: Referred to Bureau on Communications.*

## ADOPTIONS

### Resolution No. 59 1963

Author: Edward Liston

Representing: Santa Clara County

WHEREAS, the State of California allows both Agency Adoptions and Independent Adoptions; and

WHEREAS, it is recognized that both methods of adoption can result in satisfactory protection for the rights of the adopted child; and

WHEREAS, the percentage of failed adoptions is far higher in Independent Adoptions than in Agency Adoptions; and

WHEREAS, there is a fundamental difference between the two methods of adoptions to-wit:—in Agency Adoptions the home and adopting parents must be approved *before* placement of the child but in Independent Adoptions the home and adopting parents must be approved by the State Department of Social Welfare or a County Adoption Agency within 180 days after the filing of a petition for adoption which usually happens *after* the placement of the child; and

WHEREAS, approval of the home and adopting parents *after* placement does not protect the rights of the adopted child as adequately as approval *before* placement; now, therefore, be it

**Resolved:** That the California Medical Association urges legislation to make approval of the home and adopting parents by the State Department of Social Welfare or a County Adoption Agency before placement of the child a prerequisite of Independent Adoptions.

*ACTION: Referred to Committee on Adoptions.*

## 1960 RELATIVE VALUE STUDIES

### Resolution No. 60 1963

Author: Edward Liston  
Representing: Santa Clara County

WHEREAS, the Council of the California Medical Association on September 10, 1960, adopted the current 1960 Relative Value Study; now, therefore, be it

**Resolved:** That (1) the outdated 1957 Relative Value Study should not be used as a basis for any new contracts; (2) the outdated 1957 Relative Value Study should be abandoned as soon as practical in renewing old contracts; and that the new programs be underwritten on the basis of the then current Relative Value Studies.

**ACTION:** Adopted by House as amended (above).

## EXTRA MEDICAL REFERENCE COMMITTEES

### Resolution No. 61 1963

Author: Leon Parrish Fox  
Representing: Santa Clara County

**ACTION:** Not adopted by House.

## PRE-CONVENTION REPORT ON RESOLUTIONS

### Resolution No. 62 1963

Author: Leon Parrish Fox  
Representing: Santa Clara County

WHEREAS, inadequate communication is one of the great problems within the California Medical Association; and

WHEREAS, the compended summary of the actions of this House of Delegates for the year 1961, and presented prior to the convention of 1962, was of great assistance to all delegates; now, therefore, be it

**Resolved:** That the C.M.A. office prepare an annual report on the actions of the House, along with the preconvention status of the resolutions to all Delegates and Alternate Delegates thirty days prior to the annual meeting.

**ACTION:** Adopted by House.

## NURSING HOME RATES

### Resolution No. 63 1963

Author: Marin Delegation

WHEREAS, the present stipulated allotment by the State of California for care of chronically-ill, elderly patients in convalescent and nursing homes under the Rattigan Act would adequately cover only a small percentage of the available beds in the state; and

WHEREAS, any attempts by nursing-home operators to reduce their costs to fit the maximum allow-

ance could only result in diminishing the quality of their care; and

WHEREAS, appeals for reconsideration have been made by individuals and component medical societies which to date have brought inadequate remedial action; now, therefore, be it

**Resolved:** That this House of Delegates go on record as strongly opposing such administrative action which places in jeopardy the medical care of our elderly citizens; and be it further

**Resolved:** That the Council of the C.M.A. be urged to use all the influence at its disposal to rectify this unacceptable situation.

**ACTION:** Adopted by House.

## FORMATION OF A COMMITTEE ON SOCIALISM AND AMERICANISM

### Resolution No. 64 1963

Author: Thomas E. Hanigan  
Representing: Orange County

**ACTION:** Tabled.

## INDIVIDUAL RESPONSIBILITY

### Resolution No. 65 1963

Author: Joseph F. Boyle  
Representing: Minority Report of Ad Hoc Committee No. 2

**Resolved:** That the C.M.A. acknowledges and endorses the principle of Individual Responsibility as the only available basis for the continuation of free enterprise in the private practice of medicine—with the understanding that individual responsibility means:

A. For the physicians:

1. The responsibility to provide the highest quality medical service for each and every patient he accepts regardless of the source and amount of his remuneration;

2. The responsibility and freedom to enter into that form of financial arrangement for remuneration for his services that he himself believes best satisfies the needs of his patient and which, at the same time, allows him to provide the highest quality medical care for a fee that is equitable and which his patient can afford;

3. The responsibility to provide for the care of indigent patients out of his own personal charity should participation in a substandard program of health care interfere with the provision of high quality medical care;

4. The responsibility not to accept regimentation or control nor to aid and abet any substandard care program simply to receive payment for his services and prevent the loss of some dollars of charity he



might otherwise need to provide out of his own efforts;

5. The responsibility and need to seek new and better means of establishing and maintaining high standards of medical care; and

6. The responsibility to help prevent, identify, and prosecute fraud wherever this may be encountered in the area of provision of medical services.

B. For the patient:

1. The responsibility to enter into firm contracts or understandings with the physician as to the type and cost of medical service he can expect to obtain;

2. The responsibility to see that his just debts are paid;

3. The responsibility to prudently provide for potential future health care services by seeking out and obtaining for himself adequate health insurance;

4. The responsibility should he become truly unable to provide financially for his own health needs to ask his physician for whatever assistance may be necessary to resolve this problem and to accept realistic solutions when they are offered to him.

C. For the C.M.A.:

1. The responsibility to state that it recognizes the rights of each individual physician to accept or reject any program for provision for medical services based upon his own and his patient's needs;

2. The responsibility to identify any health care program which does not permit the physician to provide a high standard of medical care and to so advise its members;

3. The responsibility to undertake a program of education for the public as to the value and characteristics of a realistic health insurance program;

4. The responsibility to seek out and assist in the prosecution of all instances of fraud wherever they may be encountered in the provision of medical services;

5. The responsibility to institute and stimulate new programs of education for the medical profession for the continuing protection of high quality medical services and to implement the precepts of the minority report (House of Delegates Ad Hoc Committee No. 2);

6. The responsibility to advise state agencies only as to how they may provide for quality care for those individuals whom they have designated as their wards; and

7. The responsibility to refrain from any statements, endorsements, advice, etc. as to the proper level of fees for medical services in this state.

D. For the welfare agencies:

The responsibility to seek out those solutions for provision of medical services which permit the wel-

fare recipient as an individual to assume some responsibility for providing his own health care or to seek and accept charity, and to allow the individual to find his health care in the free market through some program of indemnification.

(At present, these latter provisions and responsibilities of the welfare agency would appear to be feasible only through the purchase of health insurance.)

*ACTION: Referred to Council.*

‘ ‘ ‘  
**IMPLEMENT MINORITY REPORT**  
**(House of Delegates, Ad Hoc No. 2)**

**Resolution No. 66 1963**

Author: Joseph F. Boyle

Representing: Minority Report of Ad Hoc Committee No. 2

*ACTION: Not adopted by House.*

‘ ‘ ‘  
**PARTICIPATION IN PROGRAMS**

**Resolution No. 67 1963**

Author: Joseph F. Boyle

Representing: Minority Report of Ad Hoc Committee No. 2

*ACTION: Not adopted by House.*

‘ ‘ ‘  
**I.R.P. PROGRAM**

**Resolution No. 68 1963**

Author: Joseph F. Boyle

Representing: Minority Report of Ad Hoc Committee No. 2

**Resolved:** That the C.M.A. acknowledges the validity of the principles of the Individual Responsibility Plan of the San Fernando Valley District of Los Angeles County; recognizes this plan as a potentially valuable and visible, practical application of the principles of free enterprise in the practice of medicine, encourages its members now using this plan to continue and to report their experiences to the C.M.A., and recommends that other groups of physicians seeking similar, practical mechanisms seriously study the provisions of this plan.

*ACTION: Referred to Council.*

‘ ‘ ‘  
**NON-PROFIT FOUNDATIONS**

**Resolution No. 69 1963**

Author: E. Silver

Representing: Santa Clara County

WHEREAS, recent years have noted a proliferation of nonprofit foundations, chartered by the State for varieties of purposes in the fields of health and welfare; and

WHEREAS, many such foundations impinge upon the practice of medicine in an unstructured and possibly deleterious fashion; now, therefore, be it

**Resolved:** That it be desirable that organized medicine on the statewide and local levels have

some voice in the approval and the continued workings of such foundations; and that in order to implement this end, this matter be referred to an appropriate committee of the California Medical Association for study and report of findings and recommendations.

**ACTION:** *Adopted by House.*

1 1 1

### PROPOSED CHANGES IN THE CALIFORNIA M.A.A. PROGRAM

**Resolution No. 70    1963**

Author: S. A. Skillicorn

Representing: Santa Clara County

WHEREAS, the A.M.A. and the C.M.A. have vigorously promoted implementation of the Kerr-Mills Medical Aid for the Aged Law, and have strenuously resisted Congressional efforts to tie health care for the aged to the Social Security system; and

WHEREAS, experience in the past year has revealed that there are some objectionable features to the M.A.A. program in California which are being publicized by proponents of the Social Security plan to undermine the M.A.A. Law as inadequate; and

WHEREAS, the best deterrent against Social Security medical proposals is to demonstrate that the M.A.A. program is unquestionably successful; and

WHEREAS, the success of the M.A.A. program is contingent upon continued vigorous support by the medical profession; and

WHEREAS, presently there is a Bill (AB 346) before the California Legislature which proposes changes and improvements in the M.A.A. program by correcting some of the objectionable features; now, therefore, be it

**Resolved:** That the C.M.A. endorse and actively support the following changes in the M.A.A. program in California as proposed in AB 346:

1. Eliminate the provision prohibiting payment for the first 30 days of care in nursing homes.
2. Modify the provision prohibiting payment for the first 30 days of care in hospitals to permit the applicant the alternative of qualifying sooner upon incurring expenses for hospital care in the amount of \$1,000, whichever occurs first.
3. Eliminate liability of relatives to contribute to support of recipients.
4. Require that the schedule of allowances for hospitals and nursing homes be adjusted annually to reflect wages and benefit increases to certain employees of such facilities.

**ACTION:** *Referred to Council.*

### HOSPITAL CONSTRUCTION

**Resolution No. 71    1963**

Author: Richard F. Altman

Representing: Orange County

**ACTION:** *Not adopted by House. (See Resolution No. 53.)*

1 1 1

### MEDICAL RECORDS

**Resolution No. 72    1963**

Author: San Joaquin Delegation

**ACTION:** *Not adopted by House.*

1 1 1

### FARM BUREAU FEDERATION

**Resolution No. 73    1963**

Author: Carl E. Anderson

Representing: The Council

WHEREAS, The California Farm Bureau Federation, representing the vast agricultural producing segment of our state's population, has gone on record unequivocally in opposition to the proposed King-Anderson type of legislation; and

WHEREAS, the federation's resolution adopted November 15, 1962, supported the American system of private competitive enterprise and decried King-Anderson and similar types of legislation as leading only to an inferior quality of medical care, together with increased taxes; and

WHEREAS, The California Farm Bureau Federation has been steadfast in its opposition to measures of this type and has acted vigorously in educating its members to the dangers inherent in this type of government control over services which are better provided without such control; now, therefore, be it

**Resolved:** That the California Medical Association, through its House of Delegates, publicly commend and thank the California Farm Bureau Federation for its valuable and timely support in a matter of vital legislative importance.

**ACTION:** *Adopted by House.*

1 1 1

### IMMUNIZATION CLINICS

**Resolution No. 74    1963**

Author: Los Angeles Delegation

WHEREAS, many nonmedical groups are practicing medicine through the establishing of various types of vaccine clinics; and

WHEREAS, physicians are being called upon to participate in these clinics without knowledge of the planning or information given to the public; and

WHEREAS, supervision or control is lacking regarding proper standards of immunizations, medical records and monies derived by the many organizations involved in these clinics; now, therefore, be it



**Resolved:** That the California Medical Association establish a committee to study vaccine clinics to identify those minimal requirements for operation which will permit physician participation under circumstances that will provide maximal standards of medical care for the public; and be it further

**Resolved:** The Attorney General of the State of California be requested to participate in the study to determine if these groups are in violation of the State Medical Practice Act.

**ACTION:** *Referred to Commission on Community Health Services.*

#### MEDICAL EXPENSE DEDUCTIONS

**Resolution No. 75 1963**

Author: Los Angeles Delegation

**ACTION:** *See Resolution No. 37.*

#### LABORATORY ANIMALS

**Resolution No. 76 1963**

Author: Los Angeles Delegation

WHEREAS, the Moulder and the Griffiths Bills were introduced into the last Congress which, in the guise of prevention of cruelty to laboratory animals, would result in major restrictions in the use of such animals and endanger progress in public health; and

WHEREAS, Senate Bill No. 533 has been introduced into the United States Senate, being similar Legislation, designed to restrict medical research; now, therefore, be it

**Resolved:** That the California Medical Association goes on record and states its conviction that Medical Investigators are dedicated to the protection of the welfare of laboratory animals; and

That restrictive legislation is inimical to further progress in insuring the health and prolonging the lives of animals and of man; and

That all California Legislators in Congress be advised of this action.

**ACTION:** *Adopted and referred to Committee on Legislation.*

#### PUBLIC LAW 87-297

**Resolution No. 77 1963**

Author: Los Angeles Delegation

**ACTION:** *Not adopted by House.*

#### DOCTOR PARTICIPATION IN STATE WELFARE PROGRAMS

**Resolution No. 78 1963**

Author: S. Robert Polito

Representing: Los Angeles County

**ACTION:** *Not adopted by House.*

#### CONTINGENCY ATTORNEYS' FEES

**Resolution No. 79 1963**

Author: Albert Fields

Representing: Los Angeles County

**ACTION:** *Not adopted by House.*

#### MENTAL HEALTH LAWS

**Resolution No. 80 1963**

Author: Jean F. Crum

Representing: Los Angeles County

WHEREAS, the laws providing for commitment of any person in the State of California for mental illness, are subject to individual interpretation; and

WHEREAS, in the past year, legislation originally enacted to promote the health of the people of this country, has been used punitively to degrade individuals; now, therefore, be it

**Resolved:** That the C.M.A. seek correction of these laws and amendments to laws now enacted and statewide education of the public so that:

1. No person can be committed to a hospital or other institution without the consent of the patient and/or spouse, parent, legal guardian, or under due process of the law, which include availability of the services of private physician and legal representation.

2. No person can be treated for medical, surgical or psychological disease without consent of the patient, spouse, parent, or legal guardian, or under due process of the law, which include availability of the services of a private physician and legal representation.

**ACTION:** *Referred to Committee on Legislation.*

#### C.M.A. DIRECTORY

**Resolution No. 81 1963**

Author: Henry G. Morgan

Representing: Los Angeles County

**ACTION:** *Not adopted by House*

#### DIRECT ELECTION OF C.M.A. COUNCILORS

**Resolution No. 82 1963**

Author: John W. H. Sleeter

Representing: Los Angeles County

**ACTION:** *Not adopted by House.*

#### DISPENSING OF GLASSES BY OPHTHALMOLOGISTS

**Resolution No. 83 1963**

Author: Los Angeles Delegation

WHEREAS, the physician has the right and obligation to supply or cause to be supplied, whatever services and materials are required in the treatment and care of his patient, determining his course by his professional judgment of the best interests of the patient; and

WHEREAS, the physician, when rendering services necessary to his patient's care, whether or not supplying and utilization of materials is incident to such services, is engaged in medical practice; therefore, be it

**Resolved:** That the House of Delegates of the California Medical Association instruct the California Delegates to the American Medical Association to actively work for and support the retention, without alteration, of Section 7 of the Principles of Medical Ethics, which recognizes the obligation of the physician to exercise his professional judgment in the best interest of the patient in determining whether he shall supply or cause to be supplied, necessary drugs, remedies or appliances, including glasses, provided it is done so in the best interest of the patient.

**ACTION:** *Adopted by House as amended (above).*

\* \* \*

**ACCREDITATION OF NURSING HOMES AND  
RELATED FACILITIES**

**Resolution No. 84    1963**

Author: Carl E. Anderson  
Representing: The Council

WHEREAS, the California Medical Association has since 1960 given its endorsement to the concept that a program of accreditation of nursing homes and related facilities will lead to better patient care in those facilities; and

WHEREAS, the California Nursing Home Association, the California Dental Association, the California Hospital Association and the Southern California State Dental Association have given a similar endorsement; and

WHEREAS, as a result the California Commission for the Accreditation of Nursing Homes and Related Facilities has been in existence since March, 1961, with membership from the above five organizations; and

WHEREAS, a commendable beginning of inspection and accreditation has taken place which has given the Commission national recognition; now, therefore, be it

**Resolved:** That this House of Delegates reaffirm its endorsement of the California Commission for the Accreditation of Nursing Homes and Related Facilities; and be it further

**Resolved:** That physicians be urged to seek those accredited facilities for their patients; and be it further

**Resolved:** That copies of this resolution be sent to the other member organizations of the Commission with the suggestion it be transmitted to their membership.

**ACTION:** *Adopted by House.*

**POLIO VACCINE PUBLICITY**

**Resolution No. 85    1963**

Author: Carl E. Anderson  
Representing: The Council

**Resolved:** That the California Medical Association, in behalf of its component societies and of physicians throughout the state, commend and thank members of the press, radio and television who cooperated so willingly and graciously in the community-wide campaigns and so impressed the people of the state that the administration of Sabin oral poliomyelitis immunizing vaccine resulted in outstanding success.

**ACTION:** *Adopted by House as amended (above).*

\* \* \*

**SHORT-DOYLE ACT**

**Resolution No. 86    1963**

Author: S. K. Shearer  
Representing: Los Angeles County

WHEREAS, the California Medical Association has been for some years officially on record as supporting the State subsidized and administered "Mental Health" program under the Short-Doyle Act; and

WHEREAS, the California Medical Association and other interested parties have now had several years in which to appraise the needs, the objectives and the performance of the "Mental Health Program"; and

WHEREAS, the program has come under sharp criticism in that it could readily become an instrument wherewith to abridge certain basic civil freedoms; and

WHEREAS, the California Medical Association should from time to time review and, if necessary, modify its official attitude regarding all programs in the light of current knowledge; now, therefore, be it

**Resolved:** That the Council of the California Medical Association annually conduct a comprehensive and critical review of the needs, the objectives and the performance of the California Mental Health Program under the Short-Doyle Act; and be it further

**Resolved:** That a report of the Council's findings and recommendations be submitted annually to the House of Delegates for action, if indicated.

**ACTION:** *Referred to Committee on Legislation.*

\* \* \*

**CALIFORNIA LEGISLATURE, AB #79**

**Resolution No. 87    1963**

Author: Arthur G. Michels  
Representing: Los Angeles County

**ACTION:** *See Resolution No. 39.*



## PERSONAL PHYSICIAN FOR CHILDREN

Resolution No. 88 1963

Author: C. L. Boice

Representing: Santa Clara County

WHEREAS, in recent years there has been a marked increase in the number and variety of agencies, both public and private, that are involved in programs designed to diagnose, treat or prevent disease in children with actual or potential health problems; and

WHEREAS, it is recognized that many of these programs are both necessary and desirable; and

WHEREAS, an unfortunate side-effect has been the "splintering" of the child and his problems with each agency operating without knowledge of the efforts of others; and

WHEREAS, much of this disorganized, inefficient, repetitious and often useless medical effort could be avoided if each child had a personal physician responsible for his or her medical history and examination, and for the direction and coordination of the child's health program; and

WHEREAS, all persons, groups, foundations, agencies, schools, and County Health Departments involved in the treatment or health evaluation of children should consult with the child's physician; now, therefore, be it

**Resolved:** That the California Medical Association, through its Council, Commissions and Committees convey to these various agencies, and work to impress upon them, the desirability of each child having a personal responsible physician; and be it further

**Resolved:** That these agencies be urged to consult with the child's personal physician in an effort to avoid waste, repetition and useless effort in the health care of children.

**ACTION:** *Referred to Commission on Public Agencies.*

## RECORD KEEPING OF LEGAL ACTIONS AND DISPOSITIONS

Resolution No. 89 1963

Author: Sacramento Delegation

WHEREAS, the State of California, in experiencing an unprecedented increase in population is also experiencing an increase in applicants for licensure by the State Department of Professional and Vocational Standards; and

WHEREAS, it is becoming evident that licentiates of the Department of Professional and Vocational Standards are being increasingly subjected to legal actions for alleged acts of negligence, malpractice, and unprofessional conduct; and

WHEREAS, the maintenance by the Department of Professional and Vocational Standards of records of all such legal actions and their disposition could assist in evaluating present licensing standards and afford further protection of the public from those shown to be professionally or ethically deficient as a result of such legal findings; now, therefore, be it

**Resolved:** That the California Medical Association urge the enactment of legislation that would require any party filing a claim of negligence, malpractice or unprofessional conduct against a licentiate of the Department of Professional and Vocational Standards be required to file with the Department a copy of such claim and subsequent notice of disposition whether it be by settlement, judgment, default, or other manner of disposition; and be it further

**Resolved:** That such information be made available to those professional and vocational organizations or bodies charged with the responsibility for maintenance of high professional or vocational standards for the protection of the public.

**ACTION:** *Referred to Liaison Committee to State Board of Medical Examiners.*

## COMMENDATION OF DOCTORS CLINE AND POLLOCK

Resolution No. 90 1963

Author: Sacramento Delegation

WHEREAS, the state level unification of the medical and osteopathic professions in California is an accomplished fact; and

WHEREAS, the medical direction of and continuity of effort for the unification were initiated by Doctor John W. Cline many years ago and in more recent years provided by Doctor Wayne Pollock as chairman of the Committee on Other Professions of the California Medical Association; and

WHEREAS, in recognition of their patience, guidance and counsel, the California College of Medicine in June of 1962 conferred upon them the Honorary Degree of Doctor of Science; now, therefore, be it

**Resolved:** That the House of Delegates of the California Medical Association convey to Doctor Cline and Doctor Pollock and their committee members its commendation for their many years of leadership in negotiating such unification; and be it further

**Resolved:** That there be forwarded to Doctor Cline and Doctor Pollock an appropriately inscribed scroll or plaque citing such commendation by the House of Delegates.

**ACTION:** *Adopted by House.*

## NEW RELATIVE VALUE STUDY AND USUAL FEE SURVEY

### Resolution No. 91 1963

Author: Sacramento Delegation

WHEREAS, California Medical Association relative value studies are well established and accepted as realistic guides to relativity of medical fees; and

WHEREAS, the most recent study, published in 1960, rests on data collected in 1958 and 1959; and

WHEREAS, the practice of medicine is not static, but ever changing; and

WHEREAS, it is important that relative value studies be maintained to reflect contemporary, rather than historical, conditions existing in medical practice; now, therefore, be it

**Resolved:** That this House of Delegates of the California Medical Association instruct the Bureau of Research and Planning to continue the present study of quarterly sampling to determine the usual fee of California physicians.

**ACTION:** *Adopted by House as amended (above).*

‘ ‘ ‘

## EDUCATION, LABORATORY TECHNICIANS

### Resolution No. 92 1963

Author: Robert L. Dennis

Representing: Santa Clara County

WHEREAS, the educational requirements of medical laboratory technologists have been steadily increased through the past few years, largely at the behest of the college educators and the Public Health Departments; and

WHEREAS, these demands coupled with the rapidly growing population of the State have created a great shortage of laboratory personnel; and

WHEREAS, Pathologists managing laboratories are adequately equipped to determine the ability of technologists and to evaluate their proficiency and in the end are responsible both to medical staffs and to the community for laboratory work of high quality; now, therefore, be it

**Resolved:** That this House of Delegates direct that a committee be appointed (or that existing committees be directed) to study with a representative group of pathologists a method of training medical laboratory technicians wherein the Junior Colleges and existing pathologist controlled laboratories might be used; and be it further

**Resolved:** That that committee report its recommendations to this House at its next regular meeting.

**ACTION:** *Referred to "appropriate committee" for study.*

## THERAPEUTIC ABORTIONS

### Resolution No. 93 1963

Author: James C. MacLaggan

Representing: A Councilor

WHEREAS, the 1962 House of Delegates of the California Medical Association passed a resolution favoring relaxation of the present stringent laws regarding abortion; and

WHEREAS, study by a Legislative Interim Committee of the State of California indicates there may be a change in present law so liberal that all controls would be abolished; now, therefore, be it

**Resolved:** That the Legislative Committee of the California Medical Association be instructed to attempt to modify the present law to relax the indication for therapeutic abortion from the present requirement that the mother's life be endangered to state "that the mother's physical health be endangered"; and be it further

**Resolved:** That therapeutic abortion for mental health of mothers be restricted to serious psychiatric diagnosis such as severe psychosis, etc., and not for the minor psychiatric diagnosis such as psychoneurosis.

**ACTION:** *Adopted by House.*

‘ ‘ ‘

## PROFESSIONAL COURTESY

### Resolution No. 94 1963

Author: San Francisco Delegation

WHEREAS, Chapter 4, Section 1 of the Principles of Medical Ethics of the American Medical Association states "The physician should cheerfully and without recompense give his professional services to physicians or their dependents if they are in his vicinity"; and

WHEREAS, the Preamble of the Principles of Medical Ethics of the American Medical Association states that "There is but one Code of Ethics for all, be they group, clinic or individual, and be they great and prominent, or small and unknown" and several years have elapsed since the A.M.A. Code of Ethics was reviewed and clarified but not substantially revised; and

WHEREAS, in the meantime great socio-economic and other changes have occurred in medicine so that

1. It has been adjudged ethical when certain physicians carry insurance which either partially or completely covers their medical care for their colleagues to accept such insurance payments. Others have no coverage.

2. Certain specialties because of their nature, and certain individuals because of their position and renown, are called upon to a greater extent than



others. When there is no recompense such services may become a financial burden. Some physicians under such circumstances believe they must establish a fee.

Furthermore, such problems as care of medical dependents within the ethical framework or compensation of certain specialties in free clinics and any other problems which naturally evolve during the course of study, should be clarified or made uniform; now, therefore, be it

**Resolved:** That an appropriate study group be established by the California Medical Association which can make recommendations to the American Medical Association to clarify the issues for the benefit and information of all physicians, so that in truth there will be one code of ethics for all; and be it further

**Resolved:** That this study group report back to the C.M.A. at the next annual session.

**ACTION:** *Referred to Council.*

#### AIR POLLUTION

Resolution No. 95 1963

Author: San Francisco Delegation

WHEREAS, air pollution is a statewide problem of increasing importance and great urgency; and

WHEREAS, the medical profession is vitally interested in maintaining clean air for health and esthetic reasons; and

WHEREAS, local medical society air pollution committees are unable to function statewide in a problem which has no well defined boundaries; now, therefore, be it

**Resolved:** That the C.M.A. Council be asked to study the advisability of setting up an air pollution committee to function as a coordinating body for the various local medical society air pollution committees, and which also can act in an advisory ca-

capacity to the State Legislature and to the State Department of Public Health.

**ACTION:** *Adopted by House.*

#### CONDEMNATION OF CIGARETTE SMOKING

Resolution No. 96 1963

Author: Albert Fields

Representing: Los Angeles County

**ACTION:** *See Resolution No. 36.*

#### QUALIFICATION FOR ASSOCIATE MEMBERSHIP

Resolution No. 97 1963

Author: Ninth Councilor District

WHEREAS, an increasing number of physicians are practicing medicine on a salary basis; and

WHEREAS, it is important and desirable for all practicing physicians to participate actively in medical society affairs; and

WHEREAS, the bylaws of the California Medical Association and its dues structure tend to encourage salaried physicians to become associate rather than active members; now, therefore, be it

**Resolved:** That C.M.A. encourage component societies to encourage active rather than associate membership for salaried physicians.

**ACTION:** *Adopted by House as amended (above).*

#### TAX DEDUCTIONS FOR HEALTH COSTS

Resolution No. 98 1963

Author: Marin Delegation

**ACTION:** *See Resolution No. 37.*

#### EDUCATIONALLY HANDICAPPED CHILDREN

Resolution No. 99 1963

Author: C. Gerald Scarborough

Representing: Santa Clara County

**ACTION:** *Not adopted by House.*



## AMENDMENTS TO CONSTITUTION AND BYLAWS

Amendments to the Constitution and Bylaws may be introduced at any session of the House of Delegates, with provision that Bylaw amendments may be acted upon after having lain on the table for 24 hours and Constitutional amendments after having lain on the table for one year.

All proposed Constitutional amendments introduced at the first meeting of the House of Delegates at any session are referred to the appropriate reference committee for its consideration and comments. The reference committee may suggest alternate amendments or make other comments for the information of the same reference committee or the House of Delegates a year later.

Under these provisions, several proposed amendments to the Constitution introduced at the 1962 session of the House of Delegates were before the House for vote at the 1963 session. In some instances, proposed amendments to the Bylaws which were accompaniments to the proposed Constitutional amendments were also placed on the table in 1962 and brought forth for vote in 1963.

Reference Committee No. 4 also reported on a number of proposed amendments to the Constitution and Bylaws, on all of which the committee recommended, and the House voted, that the amendments be not adopted. These included Constitutional Amendments Nos. 4, 5 and 6 from 1962, Bylaw Amendments Nos. 12—62 and 13—62, 3—63, 6—63, 7—63, 8—63, 9—63 and 10—63.

### RESOLUTIONS

Reference Committee No. 4 of the 1963 House of Delegates was called upon to make recommendations on several resolutions which were closely tied in with amendments to the Constitution and Bylaws which normally go to this committee. On this assignment the committee recommended and the House approved Resolution No. 42, dealing with the titling of proposed amendments to the Constitution and Bylaws. This resolution appears in the list of resolutions appearing in this issue.

Also referred to this reference committee were Resolutions Nos. 3 and 82, both of which failed to gain approval by the House of Delegates.

## ACTIONS

All proposed amendments to the Constitution and Bylaws require a two-thirds affirmative vote of the House of Delegates for passage.

Listed below are those amendments to the Con-

stitution and Bylaws which were approved by the 1963 House of Delegates. These are numbered to show both their serial number at the time of introduction and the year in which they were introduced.

### CONSTITUTIONAL AMENDMENTS

#### CONSTITUTIONAL AMENDMENT NO. 1—62

Amends Article I, Section 3 of the Constitution by deleting the present language and substituting therefor the following:

“This Association is an organization composed of the component societies and their members, the House of Delegates, the Council, the Scientific Board, the Scientific Assembly, Bureaus, Commissions and Standing Committees.”

#### CONSTITUTIONAL AMENDMENT NO. 2—62

Amends Article III, Section 1, of the Constitution by deleting the word “and” at the end of subsection (c) and adding a new subsection (d) to read as follows:

“(d) Ex-officio without the right to vote, eighteen (18) members of the Scientific Board selected as

provided in the Bylaws, and” . . . The present subsection (d) shall be redesignated (e).

#### CONSTITUTIONAL AMENDMENT NO. 3—62

**Resolved:** That Article III, Part B, Section 9, of the Constitution of the California Medical Association shall be amended by inserting a new subparagraph (c) and redesignating the present subparagraph (c) as (d), and the present subparagraph (d) as (e). The new subparagraph (c) shall be inserted immediately after subparagraph (b) and shall read as follows:

“(c) One (1) member of the Executive Committee of the Scientific Board to be elected by the Executive Committee of that body from representatives of the scientific sections or members-at-large, without the right to vote.”



## BYLAW AMENDMENTS

### BYLAW AMENDMENT NO. 1—63

**Resolved:** That Chapter V, Section 9 of the Bylaws be amended by adding the words shown in italics to the first paragraph of the section, the balance of the section to remain unchanged. This sentence will then read as follows:

"Each of the aforesaid committees shall consist of three *or more* members, the chairman of each to be designated by the speaker."

\* \* \*

### BYLAW AMENDMENT NO. 2—63

**Resolved:** That Chapter IV of the Bylaws be amended as follows:

Section 4(c) should be amended in the following way: (New wording is in italics).

"(c) Election of Section Officers.

The members of each section shall, at the regular Annual Session of the Association, elect a chairman and a *vice-chairman*, to serve for the term of one year and a *secretary* to serve a term of three years. *In addition, the members of each section shall also select three nominees for the Scientific Board, one of whom, when elected by the Council, shall serve for a term of three years. The secretary may serve a second full three-year term. Each section shall have an executive committee which shall consist of the chairman, the vice-chairman, and secretary. If a vacancy occurs in any office, the executive committee of the section shall appoint an eligible member to fill the vacancy until the next annual meeting. Prior to the annual meeting, the chairman of each section shall appoint a nominating committee composed of three members who shall nominate one or more members for all elective offices of the section and nominate three or more members for the Scientific Board.*"

Section 5, entitled "Meetings and Registration at Annual Session," shall be amended in the following way:

"(a) *General Meetings.*

The general meetings of the Association, the meetings of the House of Delegates, and the meetings of the Scientific Assembly and its sections at any session shall be held in the State of California at the same locality and in buildings as convenient of access, one to the other, as may be possible.

"(b) *Registration at Annual Session.*

Each member in attendance at any session shall register, after his right to membership has been verified by reference to the records of this association.

"(c) *Registration for Scientific Sections.*

*An active member of the Association shall designate at the time of registration, the section in which he wishes to be registered and he shall be eligible to vote in that section only. No member shall take part in any of the proceedings of any session until he has complied with the provisions of this section of the Bylaws.*"

\* \* \*

### BYLAW AMENDMENT NO. 4—63

**Resolved:** That Chapter VII, Section 1, Subsection (a) be amended by deleting sub-section 4, and redesignating the present sub-section (5) as sub-section (4).

\* \* \*

### BYLAW AMENDMENT NO. 5—63

**Resolved:** That Chapter VII, Section 1, Subsection (c) be amended by adding thereto a new sub-paragraph 8, to read as follows:

"8. Committee on Medical Aspects of Sports."

## 1963 CONSTITUTIONAL AMENDMENTS FOR ACTION IN 1964

Five proposed amendments to the Constitution were introduced in the 1963 House of Delegates. They will be reviewed by Reference Committee No. 4 of the 1964 House. (The new wording is in italics.)

### CONSTITUTIONAL AMENDMENT No. 1

Subject: Direct Election of All District Councilors  
Article III, Part B, Section 11

Author: John W. H. Sleeter

Representing: Los Angeles County

**Resolved:** That the Constitution of the C.M.A.,

Article III, Part B, Section 11, be amended to read as follows:

"SECTION 11—Election of Councilors

*"District councilors shall be elected by the vote of the members, entitled to vote, from each district, in the manner and at the time specified in the bylaws."*

and be it further

**Resolved:** That the bylaws of the C.M.A. be amended to provide for the election of district councilors in accordance with this Constitutional amendment.

## CONSTITUTIONAL AMENDMENT No. 2

Subject: Permit Councilor District Number Three to Define Sub-councilor Districts  
Article III, Part B, Section 10

Author: Walter H. Brignoli

Representing: Reference Committee No. 4

**Resolved:** That Article III, Part B, Section 10 of the Constitution of the California Medical Association be amended to provide that:

"District Number Three, comprising the County of Los Angeles *may define the geographic or other limits of the sub-councilor districts within the county, provided their bylaws specify that delegates and alternates shall be elected from the same sub-councilor districts.*"

## CONSTITUTIONAL AMENDMENT No. 3

Subject: Direct Election of Councilors in Districts Wholly Contained within Boundaries of One Component Medical Society  
Article III, Part B, Section 11

Author: Joseph P. O'Connor

Representing: Los Angeles County

**Resolved:** That Article III, Part B, Section 11—Election of Councilors, be amended to read hereafter as follows:

"District councilors shall be elected by vote of the delegates from each district, in the manner and at the time specified in the bylaws; provided, however, *that in those councilor districts wholly contained within the boundaries of one Component Medical Society, district councilors may be elected by the vote of the members entitled to vote from such councilor or sub-councilor district, if the district be divided, in the manner and at the time specified in the bylaws; subject, however,* that at the first meeting of the House of Delegates, after a district councilor has been elected, his name shall be submitted to the House, by the delegates from the district and (1) if there is no challenge by any delegate, then the speaker shall declare his election completed, and (2) if any delegate shall challenge the election on any ground, including fitness of the councilor to serve as a district councilor, the questions presented by the challenge, shall be submitted to a Qualifications Committee, consisting of the president, president-elect, and one delegate appointed by the speaker, from the councilor district or sub-district involved. The Qualifications Committee shall consider all grounds upon which the councilor is challenged, and report back to the House. If the committee reports in favor of confirming the councilor's election, the speaker shall declare him elected. If the committee reports against confirming the councilor's election, a three-fourths affirmative

vote shall be necessary to sustain the report of the committee, in which event, the councilor shall be ineligible to serve as a district councilor, and the delegates or members from the district or sub-district shall immediately proceed to the election of another councilor for the vacant office. If an adverse report of the Qualifications Committee is not sustained, then the councilor shall be declared elected by the speaker."

## CONSTITUTIONAL AMENDMENT No. 4

Subject: Permit District Number Three to Subdivide into the Same Number of Sub-councilor Districts as There Are Councilors and Elect Sub-councilors by the Membership  
Article III, Part B, Section 10

Author: Joseph P. O'Connor

Representing: Los Angeles County

**Resolved:** That Article III, Part B, Section 10 of the California Medical Association Constitution, wherein, it refers to District Number Three, be amended to read hereafter as follows:

"District Number Three, comprising the County of Los Angeles. *The members of District Number Three may, by a vote of the members entitled to vote, elect to divide District Number Three into the same number of sub-councilor districts as there are councilors. If the district is so divided, a councilor shall be elected by and represent the members of each sub-councilor district.*

## CONSTITUTIONAL AMENDMENT No. 5

Subject: Permit Direct Election of Councilors in Councilor Districts Wholly Contained within the Boundaries of One Component Medical Society  
Article III, Part B, Section 11

Author: Joseph P. O'Connor

Representing: Los Angeles County

**Resolved:** That Article III, Part B, Section 11—Election of Councilors—be amended to hereafter read as follows:

"District councilors shall be elected by vote of the delegates, from each district, in the manner and at the time specified in the bylaws; provided, however, *that in those councilor districts wholly contained within the boundaries of one Component Medical Society, district councilors may be elected by the vote of the members entitled to vote from such councilor or sub-councilor district, if the district be divided. At the first meeting of the House of Delegates, after a district councilor has been elected, his name shall be submitted to the House by the Delegates from the district or sub-district, and the speaker shall declare his election completed.*



## Council Meeting Minutes

*Tentative Draft: Minutes of the 492nd Meeting of the Council, Los Angeles, Biltmore Hotel, June 1, 1963.*

The meeting was called to order by Chairman Anderson in the Biltmore Hotel, Los Angeles, on Saturday, June 1, 1963, at 10:00 a.m.

### Roll Call:

Present were President Sherman, President-Elect Doyle, Speaker Quinn, Vice-Speaker Heron and Councilors MacLaggan, Wilson, Todd, Goel, O'Neill, Bullock, O'Connor, Rogers, Murray, Davis, Miller, Hudson, Kaiser, Anderson, Dozier, Grunigen and Cosentino.

Absent for cause, Councilors Ham, Dalton, Watts, Campbell; Editor Wilbur and Secretary Hosmer.

A quorum present and acting.

Present by invitation were Messrs. Thomas, Clancy, Collins, Marvin, Whelan, Klutch, Clark, Tobitt and Bowman and Doctor Miller of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Doctor Dan O. Kilroy, legislative chairman and Mr. Eugene Salisbury of the Public Health League; county executives Rosenthal of Forty First, Baker and Field of Los Angeles, Brayer of Riverside, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco; Doctor Harold Erickson of the State Department of Public Health; Doctor Daniel Lieberman of the State Department of Mental Hygiene; Mr. Robert Garrick, consultant; Doctors T. Eric Reynolds, Paul Hoagland and Carl Horn of California Physicians' Service; Frank R. McDougall of the California Hospital Association; Mr. John Pompelli of the A.M.A.; Doctor Ballentine Henley of the California College of Medicine; and Doctors Harold Kay and Stuart Knox.

### 1. Minutes for Approval:

On motion duly made and seconded, the minutes of the 490th and 491st meetings of the Council held respectively on March 27 and April 27, 1963, were approved.

### 2. Membership:

(a) A report of membership as of May 28, 1963, was presented and ordered filed.

(b) On motion duly made and seconded, 2,226 delinquent members whose dues had been paid by May 28, 1963, were voted reinstatement.

(c) On motion duly made and seconded, 21 applicants were elected to Associate membership. These were: Joel Fort, Alameda-Contra Costa County; Ralph C. Jung, Forty First; Paul H. Guth, Orange County; Paul A. Exelby, San Bernardino

County; Roger K. Larson, Fresno County; Jose A. Aguilar, Roderic Gorney, Jack M. Hellman, Benjamin Maurice Lieberman, Hyman Peck, Leo Weil Syman, John T. Wilson, Jr., Los Angeles County; Eleanor U. Brown, Zach B. Coblenz, Robert Jameson, Alfred B. Philips, Kahn Uyeyama, Forrest M. Willett, San Francisco County; Truman A. Newberry, San Joaquin County; Alvin Griffiths Barnes, San Luis Obispo; Joseph A. Verderame, Stanislaus County.

(d) On motion duly made and seconded in each instance, 39 members were elected to retired membership. These were: Bernard Burch, John Robertson Henry, Alameda-Contra Costa; Jane M. Brand, Malcolm L. Castleberry, Georgia M. Clark, Delmar B. Cosby, Homer E. De Sadeleer, Rex Dodds, Wayne Dooley, Phoebe Dunning Douglas, Mary E. Emig, Frederick C. H. Fowler, J. Francis Guyton, William W. Hampton, Katherine H. Hopps, Harold P. Huntington, Lida G. Keyes, Amanda C. Marshall, Duward L. Mayes, Ross H. McClaskey, Edward W. Milum, George K. Needels, Hester T. Olewiler, William V. Patterson, Harold Robbins, Simon M. Schwartz, Mabel Sipple, Jack M. Stein, Fred H. Stone, Robert R. Tornell, Victor M. Trask, Forty First; Wallace Dodge, Louise Josephine Gordy, Lucille McConnell Gustafson, Los Angeles County; Hiram M. Currey, Riverside County; George W. Hemminger, Sacramento County; James H. Hall, Lewis Michelson, Roy H. Parkinson, San Francisco County.

(e) On motion duly made and seconded in each instance, reduction of dues was voted for reasons of prolonged illness or postgraduate study, for 13 members.

### 3. California College of Medicine:

Doctor Henley, President of the California College of Medicine, thanked the Council for the recent contributions made by C.M.A. to the C.C.M. He also reported that a "search committee" is actively seeking qualified candidates for appointments to the deanship and as chief of the department of surgery.

### 4. State Department of Public Health:

Doctor Harold Erickson, deputy director of the State Department of Public Health, reported briefly on the Asian flu epidemic. He stated that an application for a federal grant is being made by the department to develop a small study at local level to determine why a certain segment of the population has not been vaccinated for diphtheria, smallpox, polio and tetanus. According to Doctor Erickson, a \$483,000 grant will be available, if a congressional appropriation is made, to carry out a pilot study of migrant farm labor health problems.

#### 5. *State Department of Mental Hygiene:*

Doctor Daniel Lieberman, Director of the State Department of Mental Hygiene, thanked C.M.A. for providing inspection teams to visit all state mental hospitals. Doctor Stuart Knox, chairman of the project for C.M.A., reported that surveys of five mental hospitals have been completed and a report on each is being written. The Council commended the twenty-five physicians who took part in the surveys. Laudatory press coverage of this program was noted with satisfaction.

#### 6. *State Department of Social Welfare:*

Doctor Lester McDonald, medical consultant to the State Department of Social Welfare, outlined to the Council the various amendments to the Rattigan-Burton Act contained in A. B. No. 59.

#### 7. *California Physicians' Service:*

Doctor Paul Hoagland reported that C.P.S. is making an extensive survey of its relationships with the medical profession. An experimental program is also being undertaken to determine the feasibility and costs of providing insurance coverage for convalescent care. He noted that over 50% of the physicians in Santa Barbara County are now participating in the public assistance program in that county, under the experimental, prepaid C.P.S. program inaugurated the first of the year.

#### 8. *California Hospital Association:*

Mr. McDougall, President of California Hospital Association, reported that thirty former osteopathic hospitals have now qualified for membership in C.H.A. Members of the Forty First Medical Society are being granted medical staff privileges in the hospital in which Mr. McDougall is administrator, and in other hospitals he has visited.

#### 9. *Reports of Officers:*

President Sherman reported on his various activities since the last meeting; included were the following: a meeting with the Committee on the Medical Aspects of Sports, a meeting sponsored by the Bureau of Research and Planning, the national meeting of the Joint Council to Improve the Health Care of the Aged, annual meeting of the California Medical Assistants, a meeting with the board of directors of L.A.C.M.A., a meeting of the Emergency Action Committee with the State Department of Employment, and attendance at meetings considering legislative problems facing medicine, held at A.M.A. headquarters, and similar meetings held in San Francisco and Los Angeles.

President-Elect Doyle reported to the Council concerning his attendance at a national AMPAC meeting. He also attended many of the meetings reported on by President Sherman.

#### 10. *House of Delegates' Resolutions:*

The Council completed its review of various resolutions adopted at the 1963 Annual Session of the House of Delegates and referred them to the appropriate committees for necessary action.

#### 11. *Committee on Legislation:*

Doctor Dan Kilroy, chairman of the C.M.A. Committee on Legislation, reviewed the status of various bills of interest to medicine pending before the State Legislature. Proposals to modify the law regarding such things as abortions, workmen's compensation, the payment by the state of customary professional fees, and the establishment of licensure for x-ray technicians, have been referred to various committees for interim study. Bills relating to staff hospital records, hypnosis, physician-ownership of pharmacies, the "little" King-Anderson bill, and A. B. No. 79—professional corporations, are still pending. Since the House of Delegates directed that further study be made before legislation is supported, the Council directed that C.M.A. oppose A. B. No. 79 in its present form.

#### 12. *Committee on Dangerous Drugs:*

Doctor Quinn reported that Senate Resolutions 150 and 151 urge C.M.A. to educate its members with respect to chloramphenicol and other dangerous drugs. It was recommended that scientific education articles be prepared for publication, especially concerning Chloromycetin, Percodan and Methedrine. It was moved, seconded and voted that the Committee on Dangerous Drugs and the Committee on Scientific Information have such articles written, and submit them to *California Medicine* for publication.

#### 13. *Council Ad Hoc Committee on Radiologists' Fees:*

Doctor Davis reported to the Council that the committee has held its first meeting and that progress is definitely being made.

#### 14. *Council Ad Hoc Committee on the Annual Component Officers' Conference:*

Doctor Dozier reported that this committee has met and reviewed the above subject in its entirety. It was their recommendation that the meeting in 1964 be held in conjunction with the Annual Session; that is, the day before the session commences.

#### 15. *1960 Relative Value Studies:*

The Commission on Medical Services reported that it will have ready by the fall of 1963, a revision of the nomenclature in the 1960 Relative Value Studies.



16. *Commission on Public Agencies:*

Doctor MacLaggan reported favorably the recommendations of the Committee on Other Professions concerning the nurse obstetrical program being studied by the State Department of Public Health. On motion duly made and seconded, this report was referred back to the commission for further study.

17. *Commission on Community Health Services:*

Doctor Kay reported that the publication of *Health Tips* is continuing to receive much favorable comment. The study of fluoridation being conducted with the dental association is continuing.

A statement concerning C.M.A.'s participation in outside activities, which was recommended by the commission, was approved by the Council.

"Suggested Guides for Liaison with County Hospitals" was approved, with minor changes.

The Council was advised that the Committee on Traffic Safety has reported favorably on a proposal that the State Department of Public Health establish a traffic safety unit to study traffic accidents. Upon motion duly made and seconded, the Council approved this action.

18. *Bureau on Communications:*

On behalf of the chairman, Mr. Marvin reported that the Bureau on Communications is developing a series of slides to assist speakers in the presentation of various subjects of public interest, and is also developing a statement to be used by schools concerning smoking.

19. *Bureau of Research and Planning:*

The Council approved the publication of the Physician Fee Index study developed by the Bureau.

20. *Keogh Retirement Program:*

Mr. Hassard recommended that the consultants appointed by the Council proceed to develop specifications upon which proposals may be sought for a) an annuity insurance program, and b) a group equity investment program. The Council approved the recommendation and directed that necessary inquiries be made.

21. *St. Joseph Hospital, Eureka:*

The Council approved a requested study of staff relationships at St. Joseph Hospital, Eureka, by a joint C.M.A.-C.H.A. inspection team.

22. *Complaints Concerning Non-members:*

The Council directed the Committee on Mediation and Medical Care Insurance and the Medical Executives' Conference to study and report on whether fee complaints and related problems concerning non-members of a component medical society should be reviewed by local and state review committees.

23. *Congratulations to John Quilici:*

The Council extended congratulations to John Hunton's stepson, John Quilici, who was graduating on June 1, 1963, from the University of California Medical School.

24. *Dates of Council Meetings:*

The Council confirmed its next three meetings, to be held on July 13 in San Francisco, August 24 in Los Angeles, and October 12 in San Francisco. A schedule of meetings through the next Annual Session, is to be presented to the next Council meeting.

25. *Sonoma County Medical Society:*

The Council commended Sonoma County Medical Society for leading all counties in California in the percentage of the population immunized for polio.

26. *Scientific Board Survey:*

Chairman Anderson reported that the Sonoma County Medical Society may ask the Scientific Board to survey the activities of the Kelly Foundation in Santa Rosa. The Council recommended that the Scientific Board acknowledge such a request when it is received.

*Adjournment:*

There being no further business to come before it, the meeting was adjourned at 4:30 p.m. in memory of Doctor James Dalton's mother.

CARL E. ANDERSON, M.D., *Chairman*  
MATTHEW N. HOSMER, M.D., *Secretary*

# WHAT?

AMERICAN MEDICAL ASSOCIATION  
CONGRESS ON OCCUPATIONAL HEALTH

*and*

*September 25-26, 1963*

WESTERN INDUSTRIAL HEALTH  
CONFERENCE

*September 27-28, 1963*

# WHERE?

JACK TAR HOTEL

*San Francisco*

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Your committee\* encourages the participation of anyone having an interest in the field of occupational health. A variety of interesting topics for general physicians as well as specialists will be presented.

For CONGRESS information, contact Henry F. Howe, M.D., Secretary, Council on Occupational Health, American Medical Association.

For CONFERENCE information, contact B. M. Brundage, M.D., Secretary, Western Industrial Medical Association, Atomics International, P. O. Box 309, Canoga Park, California.

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\*Committee on Occupational Health, California Medical Association.





**George G. Reinle, M. D.**

*President of California Medical Association, 1933*

BY THE DEATH of Doctor George G. Reinle of Oakland on April 12, 1963, California medicine lost one of its more colorful and energetic members. Doctor Reinle was born in San Francisco in 1872 and soon moved to Oakland, whence he returned to attend medical school at the now no longer existing San Francisco College of Physicians and Surgeons, graduating in 1901. He then began practice in Oakland and was early associated with another prominent and colorful physician, Doctor O. D. Hamlin. Later Doctor Edwin D. Greer was a close friend and professional associate.

At first he was in general practice, but about 1911 he went to Vienna and studied urology and, upon his return, was Oakland's first urologist. In due time he became president of the Western Section of the American Urological Society.

In 1915 Doctor Reinle became president of the Alameda County Medical Association, and in 1933 was president of the California Medical Association. Later he became vice president of the American Medical Association.

Very early in his medical practice and shortly after the Samuel Merritt Hospital was organized and built under the terms of the will of Doctor Samuel Merritt of Oakland, Doctor Reinle became a member of the staff and served prominently on it

45 years, for 34 of which he was a trustee of the hospital. He was granted life membership in the Alameda-Contra Costa Medical Association in 1947 and in the California Medical Association in 1948.

Not content with the practice of medicine alone, Doctor Reinle was prominent and well known in other fields. He was president of the Oakland City Board of Health; a director of the former Central Bank of Oakland; chairman of the executive committee of the First Western Bank and Trust Company and president of the West Coast Soap Company. He was a Mason and a member of the Elks and Commonwealth Clubs.

George Reinle was a genial and friendly man, much beloved by those who were closely associated with him in practice. He had a following of patients who were unusually warm in their devotion to him.

Doctor Reinle was a part of an era in medicine which has passed, as have most of its physician personalities. It was a notable transition period in American medicine from the days of the men of the Nineteenth Century when medicine was almost exclusively an art, to the modern practice of medicine that is far more scientific, although far from exclusively so. Doctor Reinle was one of those who served during this difficult transition period between the old era and the new.

T. ERIC REYNOLDS, M.D.

## — In Memoriam —

ANDERSON, ELMER LAWRENCE, Los Angeles. Died May 30, 1963, in Los Angeles, aged 75, of cerebral infarction. Graduate of Columbia University College of Physicians and Surgeons, New York, New York, 1919. Licensed in California in 1922. Doctor Anderson was a member of the Los Angeles County Medical Association.



BLATHERWICK, GEORGE WASHINGTON, Los Angeles. Died May 24, 1963, in Inglewood, aged 85, of cardiac arrest following gastric surgery. Graduate of Rush Medical College, Chicago, Illinois, 1909. Licensed in California in 1914. Doctor Blatherwick was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



CALLAWAY, CLAUDE P., San Francisco. Died in 1963, aged 47. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1942. Licensed in California in 1948. Doctor Callaway was a member of the San Francisco Medical Society.



CULLEN, BERNARD RAPHAEL, Long Beach. Died June 1, 1963, aged 59 of coronary occlusion. Graduate of the University of California School of Medicine, Berkeley-San Fran-

cisco, 1930. Licensed in California in 1930. Doctor Cullen was a member of the Los Angeles County Medical Association.



FEIN, GEORGE, Los Angeles. Died May 20, 1963, in Los Angeles, aged 50, of asphyxia; pulmonary pre-cardio metastasis, carcinoma of the stomach. Graduate of the University of Michigan Medical School, Ann Arbor, 1936. Licensed in California in 1937. Doctor Fein was a member of the Los Angeles County Medical Association.



GRAVES, CHARLES ALLEN, Los Angeles. Died May 13, 1963, in Los Angeles, aged 60, of bronchogenic carcinoma. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1928. Licensed in California in 1928. Doctor Graves was a member of the Los Angeles County Medical Association.



LAWRENCE, NORRIS BERWYN, San Bernardino. Died May 7, 1963, in San Bernardino, aged 58. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1935. Licensed in California in 1936. Doctor Lawrence was a member of the San Bernardino County Medical Society.



LIEBERMAN, BENJAMIN MAURICE, Van Nuys. Died May 2, 1963, age 59, of acute coronary occlusion. Graduated from Tulane University School of Medicine, New Orleans, Louisiana, 1931. Licensed in California in 1932. Doctor Lieberman was a member of the Los Angeles County Medical Association.



LINN, J. RADFORD, Auburn. Died May 7, 1963, in Roseville, aged 60. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1934. Licensed in California in 1934. Doctor Linn was a member of the Placer-Nevada County Medical Society.



LONGO, AMERIGO VITO, Santa Barbara. Died in 1963, aged 32. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1956. Licensed in California in 1959. Doctor Longo was a member of the Santa Barbara County Medical Society.



MARSHALL, JAMES MAX, Pasadena. Died May 27, 1963, in Pasadena, aged 61, of epidermoid cancer of the larynx. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, 1925. Licensed in California in 1925. Doctor Marshall was a member of the Los Angeles County Medical Association.



MILLER, JOHN E. (Eaton), Anaheim. Died May 21, 1963, in Anaheim, aged 48, of myocardial infarction. Graduate of the University of Oklahoma School of Medicine, Oklahoma City, 1939. Licensed in California in 1946. Doctor Miller was a member of the Orange County Medical Association.



MOTAMEDY, FAROKH FRANK, Los Angeles. Died May 20, 1963, at Point Mugu, aged 37. Graduate of Northwestern University Medical School, Chicago, Illinois, 1951. Licensed

in California in 1952. Doctor Motamedy was a member of the Los Angeles County Medical Association.



PICKARD, RAWSON JOSEPH, San Diego. Died May 22, 1963, in San Diego, aged 81. Graduate of Northwestern University Medical School, Chicago, Illinois, 1906. Licensed in California in 1916. Doctor Piekard was a member of the San Diego County Medical Society.



RANSON, STEPHEN WILLIAM JR., San Mateo. Died May 20, 1963, in San Mateo, aged 52, of heart disease. Graduate of Northwestern University Medical School, Chicago, Illinois, 1936. Licensed in California in 1953. Doctor Ranson was a member of the San Mateo County Medical Society.



ROSSON, RAY WRIGHT, Tulare. Died May 22, 1963, in Tulare, aged 72, of heart disease. Graduate of the College of Physicians and Surgeons, Medical Department, University of Southern California, Los Angeles, 1914. Licensed in California in 1914. Doctor Rosson was a member of the Tulare County Medical Society.



SAFARIK, E. STAFFORD (Emil), Los Angeles. Died May 26, 1963, in Los Angeles, aged 66, of pulmonary thrombosis embolism. Graduate of Rush Medical College, Chicago, Illinois, 1921. Licensed in California in 1923. Doctor Safarik was a member of the Los Angeles County Medical Association.



SERUTO, PHILIP, West Covina. Died in December, 1962, aged 42. Graduate of the California College of Physicians and Surgeons, 1946. Licensed in California in 1946. M.D. degree from California College of Medicine, 1962. Doctor Seruto was a member of the Forty First Medical Society.



STOUT, GARDNER S., San Mateo. Died May 21, 1963, in San Mateo, aged 47. Graduate of the University of Oregon Medical School, Portland, 1941. Licensed in California in 1942. Doctor Stout was a member of the San Mateo County Medical Society.



TOWNE, ROBERT DAVID, San Francisco. Died January 26, 1963, in San Francisco, aged 35, of multiple pulmonary emboli. Graduate of the University of Chicago, The School of Medicine, Illinois, 1951. Licensed in California in 1952. Doctor Towne was an affiliate member of the San Francisco Medical Society.



TRINKLE, ALBERT JOSEPH, Palm Springs. Died May 24, 1963, in Palm Springs, aged 53. Graduate of the University of Kansas School of Medicine, Lawrence-Kansas City, 1933. Licensed in California in 1939. Doctor Trinkle was a member of the Riverside County Medical Association.



WEISS, ALVIN, Los Angeles. Died May 31, 1963, aged 51, of heart disease. Graduate of the University of Illinois College of Medicine, Chicago, 1939. Licensed in California in 1945. Doctor Weiss was a member of the Los Angeles County Medical Association.



# PUBLIC HEALTH REPORT

**MALCOLM H. MERRILL, M.D., M.P.H.**  
*Director, State Department of Public Health*

PROPOSED STANDARDS to establish maximum allowable emissions of smoke from gasoline and diesel powered vehicles are currently under consideration.

The standards, which were requested by the 1961 State Legislature, would provide a basis for uniform smoke control and enable the State Motor Vehicle Pollution Control Board to certify smoke control devices if this is found to be necessary and desirable.

Smoke from motor vehicles is frequently the cause of public complaint, mostly directed at diesels.

Operating conditions that produce smoke also result in increased emissions of hydrocarbons, carbon monoxide and other products of incomplete combustion. However, the principal known reasons for controlling vehicular smoke are based on aesthetic offense, odor, visibility reduction and soiling in the immediate vicinity of the smoking vehicle.

Ten years ago, 140 babies were blinded by retrolental fibroplasia. It was not known then that an excess of oxygen in the inspired air was associated with this form of blindness. When this phenomenon was discovered in the following year the State Health Department conducted an intensive educational campaign and gave wide distribution to a statement on the use of oxygen for premature babies. Cases of retrolental fibroplasia dropped dramatically, until in recent years only an occasional case has been reported.

Aware that new medical and nursing personnel not in practice a decade ago are now staffing California hospitals, the department is preparing to restate the message on oxygen use.

Frequently a practice comes to be taken for granted when there is no longer daily evidence of its importance in prevention, and there have been scattered reports recently which indicate the value of a reminder.

Chickenpox has been added to the list of communicable diseases for which persons entering this country may be detained for observation or maintained under close surveillance when smallpox must be ruled out.

The U.S. Public Health Service said the new regulation will strengthen procedures for preventing the importation of smallpox into this country from

those parts of the world where the disease is still present.

The State Board of Public Health has been conducting a series of public hearings on regulations which would outlaw several remedies for cancer which the Cancer Advisory Council have found to be of no value in the diagnosis, alleviation, treatment or cure of cancer.

Hearings have been held on Laetrile, on the Koch, Mucorhycin and Lincoln Agent remedies, and on the Bolen Test. There will be Board consideration of the proposed regulations in July.

This is a continuation of the state's attack against useless treatments of cancer. If the regulations are adopted it will permit the health department to move in quickly and decisively on persons using these methods of treatment, and will afford better protection to the public.

There was an increase this spring in long-lived radioactive fallout components in the extreme northwestern part of California.

The department's statewide environmental radiological surveillance network showed the highest radioactivity to be in Del Norte County, with levels decreasing sharply proceeding southward from there.

The Health Department is following the situation closely. There is no present indication that any protective measures will be necessary from the standpoint of health.

The radioactive material of greatest biological interest is Strontium 90. The best indicator of its presence, because of continuous production and ease of sampling, is milk.

The monthly average of Strontium 90 concentrations in Del Norte milk for this year, in micro-microcuries per liter, were: January 49; February, 53; March, 82; April, 184 and May, 144. The current Federal Radiation Council guide level for Strontium 90 for which any consideration should be given for protective measures is 200 micro-microcuries per day averaged over a one-year period.

Although Strontium 90 values for Del Norte County are the highest ever observed in California, as in other years the levels declined as summer approached.



# WOMAN'S AUXILIARY

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## TO THE CALIFORNIA MEDICAL ASSOCIATION

### Programs of the Woman's Auxiliary

Do you California physicians know that you have a Public Relations staff of 7900 competent, dedicated, intelligent, educated and energetic women? These are women of influence and experience in their communities, with a devotion to the goals of the California Medical Association. They have been chosen by you—as wives—and they are members of the Woman's Auxiliary to the California Medical Association.

Two of the objectives of the Auxiliary are to assist the California Medical Association in its program for the advancement of medicine and public health; and to participate in other endeavors on the request of the Medical Association.

County auxiliaries and their branches sometimes have difficulty finding programs interesting enough to attract the busy and discriminating women who make up our membership, and we try to offer programs varied enough to bring out those who are social service-minded, those vitally concerned with current events and the tired young housewives who yearn for a bit of fluff and entertainment. The more serious programs are increasingly in demand, although it is a rare group that does not schedule a fashion show or bridge party now and then. All programs and speakers are cleared with the C.M.A. Advisory Committee of the Auxiliary.

We stress programming the following specific projects of the Auxiliary:

**Legislation:** Auxiliary members are vitally interested in legislation that concerns the medical field, and after attending programs which give specific information regarding bills that are pending, members spread the news. Physicians' wives are questioned as often as their husbands are about legislation regarding medical subjects, and they need to be informed.

**Careers in Allied Health Professions & Services:** The Auxiliary sponsors Career Day presentations

of various medical careers, and promotes Future Nurses Clubs, in high schools. Scholarships are made available for students of nursing, medicine, and related medical careers.

**AMA-ERF and Physicians' Benevolence:** Auxiliary contributions to AMA-ERF have continued to increase every year since this program was adopted in 1952; more than \$24,000 was contributed last year. Contributions to Physicians' Benevolence also continue to increase.

**Community Service:** Disaster medical care courses are being given, safety information is disseminated, and Good Emergency Mother Substitutes (our GEMS program) are being trained. Senior citizens are supplied with "Meals on Wheels" and homemaker service is provided. Blood banks are assisted when volunteers are needed, and we have committees on school health, on rural health, on mental health and on exposing quackery.

In addition to these serious contributions which Auxiliary members are making, another objective is that of cultivating friendly relations and promoting mutual understanding among physicians' families. Our barbecues, picnics and balls are scheduled primarily with this in view, even though we may be raising money for one of our worthy causes. Because this social role is the one with which the physicians are most familiar, they sometimes feel this is the prime purpose of the Auxiliary—and although we do have functions which sound more important, we agree that a party with our husbands is the most fun.

If every physician's wife were a member of the Auxiliary, attending meetings and becoming informed ambassadors of the field of medicine, your public relations staff could be even more effective. Is your wife a member, Doctor?

MRS. GEORGE BOWER  
Program Chairman



# INFORMATION

## Mental Health and Hospital Care In California\*

DANIEL BLAIN, M.D.

AS MOST readers of CALIFORNIA MEDICINE will know, the following appraisal of California's mental health program is my last in the official capacity of Director of the Department of Mental Hygiene.

To fully comprehend the mental health picture as it exists today, and the resulting implications for the future, it is necessary to look briefly at the recent past.

When I came to California as Director in March of 1959, I joined an outstanding administrative and professional team. Despite numerous obstacles to achieving the psychiatric program the medical profession recognizes as both possible and advisable, the California program held a preeminent position among state mental hygiene programs across the nation. Considering the acute shortages of staff at all levels, and other limiting factors over which the Department had little control, it was doing really magnificent work.

But it had also reached the point of diminishing returns in terms of patient recoveries, paradoxically accompanied by the prospect of spiralling cash outlays. According to statistical projections, the state was only two years away from having to build still another huge state hospital for the mentally ill at a cost of \$58 million, plus another \$10 million annual expenditure for its support—all without in any way upgrading or extending treatment.

The tremendous impact of California's general population boom was being—and still is—accompanied by ominous increases in state hospital admissions. It was apparent that additional well-planned and vigorous programming was mandatory if we were to forestall the serious threat of further mass accumulation of patients in state hospitals, and a resultant deterioration of hospital treatment programs.

Fortunately, we had the support of the state administration and the legislature in meeting this problem. This support has been sustained and has

made possible the significant accomplishments of the past four years. The heart of this progress has been the more adequate staffing of our state hospitals and consequent higher level of treatment, and the concurrent development of community programs as modern alternatives to state hospitalization.

Since results best bespeak the efficacy of a program, the following points are of especial interest in measuring progress.

- Admissions have risen from 21,000 in 1959 to 28,000 in 1962. Yet today there are 2,500 fewer patients in state hospitals for mental illness than there were in 1959, despite an increase of two million in the general population.

- Today, California has fewer hospitalized mentally ill in ratio to general population than any other large state.

- California has only two beds per 1,000 population for mentally ill but admits and releases more than other states with twice as many beds.

- About 35 per cent of all newly admitted patients are back in the community within a year. The median length of stay is down to 2.4 months. Two-thirds of those released will never again return to a state hospital.

Because they represent a current comparison of the nation's two heaviest populated states, the following figures for New York and California mental hygiene programs are informative:

	CALI- FORNIA	NEW YORK
Support budget (1962-63) .....	\$154,400,000	\$262,000,000
Employees .....	21,000	43,000
<b>For Mentally Ill as of June, 1962 (data from National Institute for Mental Health)—NIMH</b>		
Hospitals .....	12	21
Hospitalized patients .....	35,400	89,000
Patients per 100,000 population .....	221.1	525.8
Admissions per 100,000 population .....	151.5	171.4
Releases per 1,000 resident patients .....	621.5	230.9
Approximate annual reduction in hospital population .....	500	900
<b>Mentally Retarded</b>		
Hospitalized patients (January 1963) .....	11,920	22,000
Patients per 100,000 population (June 1962) .....	69.0	134.5

### Post-Hospital Programs

In addition to the new day treatment programs and aftercare clinics situated on the grounds of state hospitals—necessary by-products of the changed program emphasis and earlier recoveries—there has been a vastly expanded range of post-hospital and community services developed over the last four years.

Treatment successes in the hospitals made it

\*A Report to the Council of the California Medical Association, March 23, 1963.

mandatory to expand such services. Without the continuum of follow-up supervision and help during this frequently critical period, earlier releases would in many cases be impossible and the readmission rate would most certainly rise. Medical and social work efforts outside the hospital have been intensified in response to this need. By virtue of emphasized extramural programs, almost 14,000 patients are now out of our hospitals on indefinite leave. The extramural programs include family care, day care and night care, the aftercare clinics for patients in need of more rigorous follow-up, work placement and supportive services to patients on leave to their own homes.

One important post-hospital program of tremendous potential is family care, administered by the Department's Bureau of Social Work. Selected mentally ill or retarded patients leave the hospitals for supervised residence in approved foster homes, with the state paying lodging and food costs. The normal, family atmosphere of these homes has in many cases been an important catalyst to the patient's ability to move on out to a completely independent life.

This means of reintegrating mental patients into the productive lives they could and should be living has shown decided growth over the last four years. In 1959 there were 1,400 patients in family care. Today there are 2,600. For the retarded, this has meant doubling the number in family care in just two years.

California has also made a salutary contribution in demonstrating the effectiveness of community day treatment centers for even very seriously mentally ill patients. The Department has led the way in establishing this fact by opening three state-operated day treatment centers, at San Diego, San Francisco and Los Angeles. These centers have been able to discharge back to the community as recovered literally hundreds of seriously ill persons who, without such a facility available to them, were headed for commitment to a state hospital. These patients live at home and go to the centers for the full armamentarium of services that would be found in 24-hour hospitalization—but with none of the expensive housekeeping costs involved in operating a hospital. Because of the versatility of this kind of community facility, a patient may be in therapy the full eight-hour day or for part of the day or perhaps only once or twice a week, as individual needs dictate. Only a minute proportion of these patients have had to go on to 24-hour hospitalization.

The Short-Doyle Act for Community Mental Health Services is still another community-based program that has more than proven its worth in

its relatively brief period of existence. Currently, 20 municipal or county operated governments operate local mental health programs with 50 per cent reimbursement from the state for operating costs. This year 33,000 Californians are expected to receive direct services from these programs, in addition to countless others who will benefit from indirect services. Four years ago there were only 11 state-local programs with direct assistance to approximately 10,000 people. While the 20 current programs by no means afford statewide coverage, the Short-Waldie (SB 636) amendments recently presented to the legislature are expected to bring in new programs and encourage expansion of services in existing programs.

I think that the advances made under Short-Doyle program since passage of the 1957 legislation, despite the original limitations and deficiencies of the original act, clearly demonstrate the practical and beneficial aspects of state-local partnership in community mental health services.

Privately operated psychiatric institutions are also playing an increasingly important role in the treatment and care of the mentally ill and retarded in this state. California now has about 10,500 private psychiatric beds, more than any other state. Nationally, private facilities operate only two and one-half per cent of the total number of psychiatric beds, but in California private operations provide 15 per cent of the statewide total. The number of patients served annually through these private resources now totals about 30,000.

Psychiatric care at the community level has also received considerable added impetus with the opening of beds to psychiatric patients at many of the state's centrally located general hospitals. Some of these units have been established through public and private fund-raising campaigns staged by the individual hospitals. Others have established psychiatric wings with Hill-Burton funds, approved through the State Department of Public Health. The number of private outpatient psychiatric clinics is also showing a healthy increase.

The services provided by these private facilities have been a great help in relieving the pressures on tax-supported mental hygiene programs, while making it possible for many patients to receive the inpatient or outpatient care they need without leaving their communities.

In the fields of geriatrics and mental retardation, the Department of Mental Hygiene has high hopes for lessening the impact of these groups on the state hospital resident population, through developing alternatives to such commitments.

As an initial step in reducing the number of aged patients in state hospitals, the Governor's current



budget includes funds to establish a special intensive treatment unit for 250 geriatric patients at one state hospital, including a social worker community placement team. A special preadmissions screening unit for aged patients is also proposed, to be located in the San Francisco Bay area.

The importance of this is pointed up by department studies that have shown (1) that half of the 12,000 geriatric patients in state hospitals could be more appropriately placed in community nursing facilities, since psychiatric care is not high on their list of needs; and (2) as high as 47 per cent of geriatric admissions to Bay Area state hospitals may be inappropriate because, again, psychiatric treatment is not a primary need of the patient.

Community programs for the mentally retarded will receive a boost with the \$4.75 million voted last November for construction of one local treatment center and planning of two others. Tentative guidelines call for the centers to be located in urban areas of from one-half million to one million population; for each to serve about 1,000 mentally retarded through a maximum of 250 inpatient beds and programs of outpatient services to 750; and for costs to be shared by government in a variety of financial arrangements although the centers would be locally operated. The need for development of this sort of local program, which could utilize the many ancillary programs available in the community, is emphasized by the fact the state's four hospitals for the mentally retarded are operating at capacity with about 12,000 patients. There still remain 1,700 mentally retarded who have been accepted for hospitalization but who are on waiting lists for lack of bed space.

#### The Future

We already know that community psychiatric care centers can handle more patients faster, better and cheaper than large hospitals; that with the advances of the last few years we are cutting the state hospital census about 3 per cent a year; that one bed in the community is worth two in a large, isolated psychiatric hospital. I am certain that we could eventually save \$100 million a year if our state program could be decentralized.

Last year the Department of Mental Hygiene, with the help of scores of citizen experts, completed a long range plan for mental health services in California.

This plan would bring psychiatry, and state psychiatry in particular, into the mainstream of medicine where it properly belongs. The plan bears a remarkable resemblance to recommendations made in the Joint Commission Report, and to plans as presented in President Kennedy's recent call to arms in mental illness and mental retardation.

The long range plan would establish a medically and fiscally sound mental health program to meet the requirements of a state growing at the rate of almost a million new people each year. It adheres to the accepted psychiatric concept that adequate treatment "should be available as early as possible, as continuously as possible, with as little dislocation as possible, and with as much social restoration as possible."

It anticipates that the responsibility for the treatment of mental illness and mental retardation will, properly, be the same as in other diseases—resting first with the patient, his family, and his local doctor. Government mental health services would back-stop private mental health resources and would assure care for individuals who cannot be assisted on a private basis.

We look forward to a time when state government will no longer retain major responsibility for direct treatment, but will be more involved in financial aid and other help to cities, counties and non-profit operations concerned with treatment.

In order to accomplish this goal, which I believe is more reachable in California than any other state:

1. The present hospitals must be increased in efficiency by at least 25 per cent added personnel and services in the next five years—to keep up with the high population rise.
2. Alternative services, chiefly in private resources and state-local government treatment programs, must be increased.
3. The population in state systems will be reduced to those needing intensive treatment, while a great percentage of those needing long term care will go to high class nursing homes.
4. The department will emphasize leadership, consultation, community organization, supervision of state monies subvented to counties and cities, and vastly increased training and research.

As Dr. Leo H. Bartemeier, of the American Medical Association's Council on Mental Health has said, "Psychiatric knowledge, techniques and tools have now progressed to the point where it is feasible as well as desirable to treat the mentally ill in the context of the home environment."

The A.M.A. recognizes what we have demonstrated in California and in other states: that with the development of government sponsored and financed programs for the mentally ill and mentally retarded the feasibility of treatment and rehabilitation has been clearly shown, and this encourages the private sector of medicine to increase its activities in this field.

This becomes, then, one government expenditure which we recognize as constituting an investment which will help get the state government out of a direct role in health services and which encourages organized medicine to accept increasing responsibility. Without the stimulus of state and federal assistance at this time, of course, progress would be agonizingly slow in the development of the broad spectrum of services needed.

In the interim we must avoid the hazards through which we would forfeit the gains already made in California. While developing alternative means of treatment which will help meet the problem of increasing hospital admissions, we must at the same time intensify treatment efforts on our hospital wards.

At present there is sufficient staff for intensive treatment with newly admitted patients only. On about two-thirds of the wards in the state hospital system there are patients who do little more than eat, sleep and mark time. If these people are to be helped toward recovery, staffing for chronic patients should be doubled.

As state hospital buildings become obsolete and unfit, replacement beds should be located where they are needed—in the community, where the emphasis can be on services rather than beds. For this reason, state funds should be used as far as possible to help establish replacement beds in such facilities as existing county and community hospitals. Operational costs could be covered in part with state funds under the Short-Doyle program.

The third factor which demands our attention is the estimated 8,000 patients in state hospitals who could be cared for more appropriately in other ways if alternatives existed. Most of these patients require only medical or nursing home care, financial assistance or some other service. They do not need full-time residence in a specialized psychiatric hospital, but are there largely as a matter of expediency because little attention has been paid by society to better ways of providing for them. Many could live in a supervised non-medical facility and get their treatment nearby.

If medicine will lend its support to holding the line of these existing fronts—

If at the same time it deploys its efforts and resources toward establishing community programs where the physician can maintain responsibility and continuity in treatment of his patient—

Then we will see a final end to the wasteful custodial concept of psychiatric care, and in its place smaller intensive treatment hospitals and day treatment services.

Department of Mental Hygiene, State of California, 1500 Fifth Street, Sacramento.

## California Senate Urges Action on Chloramphenicol

The California Medical Association and other organizations in the medical field have been called upon by the California Senate to take steps to keep their members informed as to the uses and dangers of the drug chloramphenicol. The Senate also recommended that a system be set up for the gathering and dissemination of information about possible aberrant reactions to chloramphenicol and other antibiotic drugs.

The resolution follows:

### SENATE RESOLUTION NO. 151

#### Relative to Chloramphenicol

WHEREAS, The Senate Fact Finding Committee on Public Health and Safety has recently conducted a thorough investigation of the subject of use of chloramphenicol and the causal relationship between such use and death from aplastic anemia; and

WHEREAS, The committee concluded that a need for additional legislation is not now indicated, but that important contributions toward improved practices can be made by interested private associations and public agencies; now, therefore, be it

*Resolved by the Senate of the State of California,* That, pursuant to the recommendations of the Senate Fact Finding Committee on Public Health and Safety, the Senate urges as follows:

1. That the California Medical Association, the American Medical Association, the California State Dental Association, and the Southern California State Dental Association take immediate steps to better inform and to better police their members directly and through their various county units in regard to the drug chloramphenicol; that a program of education be undertaken, with proper warnings against use of this drug for minor infections, as specified by the Food and Drug Administration; that a program to improve the reporting of aplastic anemia cases, to emphasize the need for more thorough and more frequent blood and bone marrow checks, be undertaken; that the C.M.A. and A.M.A. investigate and report on any and all prescription drugs of a dangerous or toxic nature at regular intervals, both to physicians and pharmacists;

2. That steps be taken by the medical profession and by the pharmacists to provide that there shall be no refill of any prescription of chloramphenicol unless the patient and the physician consult and the physician writes a new prescription; that, where called for, the physician should be obligated to re-



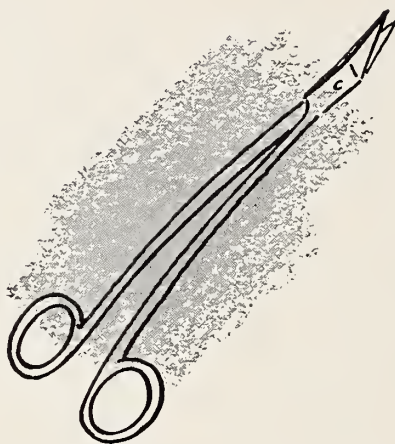
peat laboratory testing of the patient before a new prescription is written;

3. That the State Department of Public Health should be authorized to keep a closer check on all antibiotic drugs which are known to have possible toxic reactions, and should proceed as necessary in order to protect the public interest in all phases of the testing, prescribing and use related to such drugs; and be it further

*Resolved*, That the Secretary of the Senate is directed to transmit copies of this resolution to the

Secretary of the California Medical Association, the Secretary of the American Medical Association, the Secretary of the California State Dental Association, the Secretary of the Southern California State Dental Association, the Secretary of the State Pharmaceutical Association, the State Director of Public Health, and the President of the State Board of Pharmacy.

Resolution read, and unanimously adopted on motion of Senator John A. Murdy, Jr., 35th Senatorial District.



# NEWS & NOTES

## NATIONAL • STATE • COUNTY

### ALAMEDA

Dr. Donald D. Lum, former chairman of the Council of the California Medical Association, has announced his retirement from the Alameda Board of Education after 30 years of service, the last 25 as president of the board.

The Donald D. Lum Junior High School in Alameda is named in his honor.

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Dr. John H. Lawrence, director of the Donner Laboratory at the University of California, Berkeley, received the **Pasteur Medal** at a recent ceremony at the Pasteur Institute in Paris. The Institute cited Dr. Lawrence for his "contributions to understanding and treatment of disease with the products of atomic energy."

### FRESNO

Dr. Willa Louise Day, Fresno, has been awarded a Wyeth Laboratories residency **fellowship in pediatrics** which provides \$4800 to finance two years of advanced study in any hospital with a residency accredited by the Residency Review Committee of the American Board of Pediatrics and the Council on Medical Education and Hospitals of the American Medical Association.

### LOS ANGELES

Dr. Charles I. Barron, medical director of the California division of Lockheed Aircraft Corporation, Burbank, was elected president of the **Aerospace Medical Association** at the recent annual meeting of the organization in Los Angeles.

Total registration at the meeting, members and guests, was 2,472.

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Grants totalling \$58,960 to support **cardiovascular research projects** have been made to six scientists working at three institutions in Los Angeles by the American Heart Association.

The scientists and institutions are:

Los Angeles County Heart Association Cardiovascular Research Laboratory at U.C.L.A. Center for Health Sciences; Nicholas S. Assali, M.D., Allan J. Brady, Ph.D., and Albert A. Kattus, Jr., M.D.

Institute for Medical Research at Cedars of Lebanon Hospital; Joseph Katz, Ph.D., and Sheldon Rosenfeld, Ph.D.

Pasadena Foundation for Medical Research; Charles M. Pomerat, Ph.D.

The grants were allotted from funds contributed to the Heart Fund Drive by citizens of Los Angeles County, Dr. Joseph M. Oyster, president of the Los Angeles County Heart Association, said.

### SAN DIEGO

A \$500,000 gift has been given by the Timken-Sturgis Foundation to complete the research building at **Scripps Clinic and Research Foundation**, La Jolla. The new building will house the division of microbiology, which will complement work being done in the divisions of experimental pathology and biochemistry.

"Research in the division of microbiology will encompass animal virology and genetics, with the general theme of research centered on cellular replication," according to Dr. Edmund L. Keeney, medical director.

### SAN FRANCISCO

Dr. William O. Reinhardt, chairman of the department of anatomy at the University of California Medical Center, San Francisco, was named **dean of the School of Medicine** there, effective July 1. The appointment was announced by University President Clark Kerr and Provost J. B. deC. M. Saunders of the San Francisco campus. Dr. Saunders, who had been dean since 1956, held the position in addition to that of provost until the new appointment. He will continue to serve as provost.

### SANTA CLARA

A new and greatly expanded diagnostic facility for comprehensive and up-to-date **analysis of diseases of the nervous system** has just been opened at Stanford Medical Center.

This facility will offer the community and referring physicians the possibility of much more detailed diagnostic evaluation of patients with epilepsy, Parkinsonism, cerebrovascular disorders, neuromuscular disease, multiple sclerosis, cerebral palsy, mental retardation and other neurologic diseases of infancy and childhood. It will be operated in conjunction with two clinical neurological research facilities (one for premature infants and one for adult inpatients) recently awarded by the National Institutes of Health.

### GENERAL

Two schools of medicine in California—Stanford and University of Southern California—shared in a total of \$5,750,000 in **grants from the Richard King Mellon Charitable Trusts** to 23 of the nation's medical schools.

Each will receive \$50,000 a year for five years to **augment the salaries** of faculty members engaged in medical teaching.



# EDUCATION NOTICES

## MEETINGS AND COURSES

### COMMITTEE ON CONTINUING MEDICAL EDUCATION

THIS BULLETIN of the dates of continuing education programs and the meetings of various medical organizations in California is supplied by the Committee on Continuing Medical Education of the California Medical Association. In order that they may be listed here, please send communications relating to your future meetings or postgraduate courses to Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2.

### MEDICAL MEETINGS

#### AUGUST MEETINGS

- Aug. 11-14—**American Society for Pharmacology and Experimental Therapeutics.** San Francisco. Sunday-Wednesday. Contact: H. George Mandel, secretary, George Washington University School of Medicine, Washington 5, D. C.
- Aug. 12-15—**National Medical Association.** Statler Hilton Hotel, Los Angeles. Monday-Thursday. Contact: John T. Givens, M.D., executive secretary, 1108 Church Street, Norfolk, Virginia.
- Aug. 15-17—**The Reno Surgical Society,** 13th Annual Conference. Fine Arts Building, University of Nevada, Reno. Thursday-Saturday. Contact: William E. Simpson, M.D., Secretary-Treasurer, 3660 Baker Lane, Reno, Nevada.

#### SEPTEMBER MEETINGS

- Sept. 12—**Los Angeles Pediatric Society.** Los Angeles County Medical Association Building. Thursday, 7:00 p.m. Contact: Wm. Mischbach, M.D., secretary-treasurer, 17258 Ventura Boulevard, Encino.
- Sept. 12-17—**Pacific Dermatologic Association.** Hilton Hawaiian Village Hotel, Honolulu. Thursday-Tuesday. Contact: Gordon MacDonald, M.D., secretary-treasurer, 4294 Orange Street, Riverside.
- Sept. 12-14—**Saint John's Hospital** Postgraduate Assembly. Saint John's Hospital, Santa Monica. Thursday-Saturday. Contact: John C. Eagan, M.D., director, Saint John's Hospital, 1328 Twenty-second Street, Santa Monica.
- Sept. 13—**Rees Stealy Medical Clinic,** 3rd Annual Medical Symposium. Hotel del Coronado, San Diego. 2:00 p.m. Contact: James Bone, business manager, 2001 - 4th Avenue, San Diego 1.
- Sept. 25—**National Kidney Disease Foundation, Southern California Chapter,** Third Annual Professional Symposium on Kidney Disease. Statler Hilton Hotel, Los

Angeles. Wednesday. 9:00 a.m.-5:00 p.m. Contact: Mrs. Jean Gordon, administrative assistant, 5880 San Vicente Boulevard, Los Angeles 19.

Sept. 25-26—**American Medical Association Congress on Occupational Health.** Jack Tar Hotel, San Francisco. Contact: Henry F. Howe, M.D., secretary, Council on Occupational Health, AMA, 535 North Dearborn Street, Chicago, Illinois.

Sept. 27-28—**Seventh Annual Western Industrial Health Conference.** Jack Tar Hotel, San Francisco. Friday-Saturday. Contact: Chapman Burke, Code 732, Mare Island Naval Shipyard, Vallejo, California.

#### OCTOBER MEETINGS

- Oct. 2-4—**San Francisco Heart Association** 33rd Annual Postgraduate Symposium on Heart Disease. St. Francis Hotel, San Francisco. Wednesday-Friday. 9:00 a.m.-5:00 p.m. Contact: Gene C. Taylor, Executive Director, 259 Geary Street, San Francisco 2.
- Oct. 3-6—**Pacific Coast Fertility Society.** Flamingo Hotel, Las Vegas, Nevada. Contact: Julius Winer, M.D., secretary, 9915 Santa Monica Blvd., Beverly Hills.
- Oct. 4-5—**San Diego County Heart Association** 13th Annual Professional Symposium on Heart Disease. Town and Country Hotel, Mission Valley Hotel Circle. Friday, 1:00 p.m.-5:00 p.m.; Saturday 9:00 a.m.-5:00 p.m. Contact: Mr. O. M. Avison, executive director, 2545 Fourth Avenue, San Diego 3.
- Oct. 7-9—**American Electroencephalographic Society.** Jack Tar Hotel, San Francisco. Monday-Wednesday. Contact: Kenneth A. Kooi, M.D., secretary, University of Michigan Medical Center, Ann Arbor, Michigan.
- Oct. 17-20—**Academy of Psychosomatic Medicine.** Sheraton-Palace Hotel, San Francisco. Contact: Klaus Berlinger, M.D., program chairman, Langley Porter Neuropsychiatric Institute, University of California School of Medicine, San Francisco 22.
- Oct. 18—**Kern County General Hospital** Annual Postgraduate Conference. Bakersfield. Contact: George A. Paulsen, M.D., chairman, Kern County General Hospital, 1830 Flower Street, Bakersfield.
- Oct. 18-19—**Kaiser Foundation Hospitals'** Seventh Annual Symposium. Fairmont Hotel, San Francisco. Friday, 7:30 p.m.-9:30 p.m., Saturday, 9:00 a.m.-5:00 p.m. Contact: Martin A. Shearn, M.D., Director of Medical Education, Kaiser Foundation Hospital, Oakland 11.
- Oct. 20-23—**California Academy of General Practice** Annual Scientific Assembly. El Cortez Hotel, San Diego. Contact: Mr. William W. Rogers, executive secretary, 9 First Street, Room 900, San Francisco 5.
- Oct. 23-24—**American Heart Association Council on Arteriosclerosis.** Annual Meeting. Biltmore Hotel, Los Angeles. Non members \$15. Contact: Richard Hurley, M.D., 44 East 23rd Street, New York 10, N. Y.
- Oct. 24-26—**American Association for the Surgery of Trauma.** Mark Hopkins Hotel, San Francisco. Contact: William T. Fitts, Jr., M.D., secretary, 3400 Spruce Street, Philadelphia, Pennsylvania.
- Oct. 25-29—**American Heart Association** Annual Scientific Sessions. Biltmore Hotel, Los Angeles. Members, medical students, house officers, research fellows, graduate students, U.S. Armed Forces—Free. Others, \$15. Contact: James McGraw, 44 E. 23rd Street, New York 10.

Oct. 27-Nov. 1—**American College of Surgeons Clinical Congress.** San Francisco. Contact: John Paul North, M.D., Director, American College of Surgeons, 40 East Erie, Chicago 11, Illinois.

Oct. 30-31—**California Conference of Local Health Officers.** Fresno Hacienda. Wednesday-Thursday. Contact: Acton W. Barnes, Assistant Chief, Administrative Division of Community Health Services, California State Dept. of Public Health, 2151 Berkeley Way, Berkeley 4.

#### NOVEMBER MEETINGS

Nov. 1-3—**California Society of Internal Medicine Annual Meeting.** El Mirador Hotel, Palm Springs. Contact: Robert L. Paver, M.D., secretary-treasurer, 350 Post Street, San Francisco.

Nov. 1-3—**Southern California Psychiatric Society Annual Fall Convention.** Vacation Village Hotel, San Diego. 8:30 a.m. Contact: Ralph M. Obler, M.D., chairman arrangements committee, 427 North Camden Drive, Beverly Hills.

Nov. 5-13—**Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu, Hawaii. Contact: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii.

Nov. 6-7—**Los Angeles Pediatric Society, 20th Annual Brennemann Memorial Lectures.** Ambassador Hotel, Los Angeles. Wednesday-Thursday. Contact: William D. Misbach, secretary, 17258 Ventura Blvd., Encino.

Nov. 8-10—**Forty First Medical Society First Annual Convention.** Riviera Hotel, Palm Springs. Contact: Mr. Don E. Rosenthal, Administrative Director, 4775 Santa Monica Boulevard, Los Angeles 29, California.

Nov. 13—**American College of Physicians Southern California Region, Annual Basic Science Lecture.** Statler Hilton Hotel, Los Angeles. 6:30 p.m. Contact: George C. Griffith, M.D., 1136 West 6th Street, Los Angeles 17.

#### DECEMBER MEETINGS

Dec. 2-6—**American College of Chest Physicians, Postgraduate Course on Diseases of the Chest.** Ambassador Hotel, Los Angeles. Monday-Friday. 9:00 a.m.-5:00 p.m. Contact: Alfred Goldman, M.D., program chairman, 416 N. Bedford Drive, Beverly Hills.

Dec. 5-7—**West Coast Allergy Society, Annual Meeting.** Las Vegas, Nevada. Thursday-Saturday. 9:30 a.m.-5:00 p.m. Non-members \$25.00. Contact: Jack M. Chesebro, executive secretary, 1818 S.E. Division, Portland 2, Oregon.

## POSTGRADUATE EDUCATION

### AUDIO-DIGEST FOUNDATION

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### UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Aug. 3-4—**Neuro-Psychologic Institute, "Sterility."** Saturday-Sunday. 14½ hours. \$55.

Aug. 4-7—**Advanced Seminars in Urology.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 3 days. Sunday-Wednesday. 15 hours. \$137.50.

Aug. 7-9—**Anesthesiology.** Wednesday-Friday. 18 hours.\*

Aug. 7-11—**Advanced Seminars in Internal Medicine.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 4 days. Wednesday-Sunday. 20 hours. \$150.

\*Fee to be announced.

†Hours to be announced.

Aug. 23-24—**The Shoulder—Anatomy, Pathology, and Surgery.** Friday-Saturday. 12 hours.\*

Aug. 28-31—**Radiation and the Nervous System.** Wednesday-Saturday.\*†

Sept. 5-7—**The Adolescent.** Thursday-Saturday. 18 hours.\*

Sept. 12-Dec. 5—**Teaching Clinics.** Thursday evenings. 24 hours.\*

Oct. 16-April 15, 1964—**Basic Science Course in Ophthalmology.** Wednesday evenings.\*†

Dec. 6-7—**Management of Gynecologic and Urological Problems.** Friday-Saturday.\*†

Feb. 19-29, 1964—**Clinical Postgraduate Program in Mexico City.\*†**

Mar. 7-28, 1964—**Clinical Postgraduate Program in Egypt.\*†**

April 11-May 2, 1964—**Clinical Postgraduate Program in Hong Kong.\*†**

Dates by Arrangement—**Clinical Traineeship**—Anatomy, Anesthesia, Dermatology, Pediatrics, Radioisotopes, Urology: 2 weeks, \$150; 4 weeks, \$250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, 478-9711, Ext. 2114.

### LOMA LINDA UNIVERSITY

As Arranged—**Traineeships** in clinical and other departments are available by arrangement with department chairmen of the Postgraduate Division. 80 hours minimum.

**Anesthesia,** 6 months. 250-300 hours. \$350.

**Pulmonary Diseases**—can be arranged.



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For course information contact: W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles 33, Angelus 9-7241, Ext. 214.

#### **PRESBYTERIAN MEDICAL CENTER**

July 24-26—**Conference on Strabismus Surgery.** 24 hours. \$60. Contact: Eye Bank, Presbyterian Medical Center.

Nov. 7-8—**Problem Cases in Clinical Ophthalmology.** 16 hours. \$60. Contact: Eye Bank, Presbyterian Medical Center.

Nov. 9—**Arthritis.** Saturday. 8 hours. \$25.

Dec. 7—**Practical Therapy of Functional Illness.** Saturday. 8 hours. \$25.

Jan. 11—**Medical Emergencies.** Saturday. 8 hours. \$25.

Jan. 25—**Surgical Emergencies.** Saturday. 8 hours. \$25.

For information contact: Arthur Selzer, M.D., chairman, Education Committee, Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15. WESt 1-8000.

#### **UNIVERSITY OF CALIFORNIA, SAN FRANCISCO**

Sept. 9-13—**Internal Medicine.** Monday-Friday.\*†

Sept. 14-15—**Clinical Manifestations of Anxiety.** Herrick Memorial Hospital, Berkeley. Saturday-Sunday.\*†

Sept. 18-Dec. 4—**Practical Psychotherapy.** Langley Porter Neuropsychiatric Institute. Wednesday. 60 hours. \$25.

Sept. 20-21—**Clinical Pediatrics: Renal Disease and Electrolyte Imbalance.** Friday-Saturday.\*†

Sept. 24-Nov. 5—**An Overview of Mental Retardation.** Sonoma State Hospital. Tuesdays.\*†

Sept. 26-Oct. 31—**Neuropsychiatry in General Practice.** Napa State Hospital. Thursdays.\*†

Sept. 28-29—**Psychiatric Management in General Medicine.** San Mateo Peninsula Hospital. Saturday-Sunday.\*†

Sept. 28-29—**Current Problems in Surgery.** Franklin Hospital, San Francisco. Saturday-Sunday. 15 hours. \$25.

Oct. 4-6—**Progress in Urology.** Friday-Sunday. 20½ hours. \$60.

Oct. 9-12—**Retinal Detachment Symposium.** Wednesday-Saturday. 16 hours. \$75.

Oct. 12-Nov. 16—**Neuropsychiatry in Medical Practice.** Agnew State Hospital. Saturday.\*†

Oct. 19—**The Handicapped Child.** Children's Hospital, San Francisco. Saturday. 7 hours. \$15.

Oct. 19-Nov. 23—**Postgraduate Seminars in Clinical Sciences.** Mercy Hospital, Sacramento. Saturdays. 9 hours. No fee.

Oct. 24-26—**The Preclinical Basis of Gynecology.** Thursday-Saturday.\*†

\*Fee to be announced.

†Hours to be announced.

Nov. 1-2—**Graphic Methods in Cardiology.** Friday-Saturday.\*†

Nov. 9-11—**Mental Retardation.** Saturday-Monday.\*†

Nov. 11-15—**Expanded Surgery of Nasal Septum.** Monday-Friday.\*†

Nov. 15-17—**California and the Challenge for Growth: Man Under Stress.** Friday-Sunday.\*†

Dec. 5-7—**Annual Ophthalmology Postgraduate Course.** Thursday-Saturday.\*†

Dec. 6-7—**Basic Electrocardiography.** Franklin Hospital, San Francisco. Friday-Saturday.\*†

Dec. 7-8—**Psychiatry in General Practice.** Stockton State Hospital. Saturday-Sunday.\*†

Dec. 13-14—**Orthopedics: Problems of Soft Tissue Disease.** Friday-Saturday.\*†

Dec. 21-22—**Psychiatry in General Practice.** Napa State Hospital. Saturday-Sunday.\*†

Jan. 11, 1964—**Pediatrics.** Children's Hospital, San Francisco. Saturday.\*†

Jan. 29-31—**Annual Symposium: Man and Civilization.** Wednesday-Friday.\*†

Continuously—Courses presented by special arrangement: Principles and Clinical Uses of Radioisotopes (full time for one to three months), Anesthesiology (full time for one to three weeks).

For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MOntrose 4-3600, Ext. 179.

#### **UNIVERSITY OF SOUTHERN CALIFORNIA**

July 31-Aug. 16—**Sixth Annual Refresher Course in Hawaii,** and on board the S.S. *Lurline*. (Air travel also possible.) Tuition: Island portion, \$100; Island and ship portions, \$125.

Sept. 17-Dec. 3—**Elements of Practical Cardiology.** Los Angeles County Hospital. Tuesdays. 7:30-9:30 p.m. \$75.

Sept. 23-Oct. 4—**Intensive Review of Internal Medicine.** Los Angeles County Hospital. Two weeks. 8:30 a.m.-12:30 p.m. \$75.

Sept. 25-Nov. 20—**Bedside Cardiology.** St. Vincent's Hospital. Wednesdays. 7:30-9:30 p.m. \$65.

Sept. 26-Dec. 19—**Bedside Clinics and Set Clinics in Internal Medicine.** Los Angeles County Hospital. Thursdays. 7:30-9:30 p.m. \$75.

Oct. 5—**Heparin, Its Structure, Pharmacology, and Clinical Usage.** Statler Hilton Hotel, Pacific Ballroom. Saturday. 9:00 a.m.-5:15 p.m. Tuition: to be announced.

Oct. 10-11—**Gastroenterology.** Mayfair Hotel, Gold Room, 1256 West 7th Street, Los Angeles. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$40. (Includes 2 coffee breaks and 2 luncheons.)

Oct. 25—**Scoliosis.** Orthopaedic Hospital. Friday. 8:30 a.m.-5:00 p.m. Tuition: to be announced.

Oct. 28—**Practical Office Dermatology.** Los Angeles County Hospital, Outpatient Clinic. Monday. 8:30 a.m.-5:00 p.m. \$25. (Includes 2 coffee breaks and 2 luncheons.)

Nov. 5-26—**Medical Funduscopy.** Los Angeles County Hospital, Ward 5000. Tuesdays. 7:30-9:30 p.m. \$37.50.

Nov. 7-8—**Clinical Conferences and Case Presentations.** Los Angeles County Hospital. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$25. (Includes 2 coffee breaks and 2 luncheons.)

Nov. 14-15—**Sexual Problems Encountered in Medical Practice.** Huntington Sheraton Hotel. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$40. (Includes 2 coffee breaks and 2 luncheons.)

Dec. 2-6—**Psychiatry for the Internist.** Los Angeles County Hospital. Monday-Friday.\*†

Continuously—**Basic Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$100. Physicians may register at any time.

Continuously—**Advanced Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$85. Physicians may register at any time.

For course information contact: Phil R. Manning, M.D., Assoc. Dean, Postgraduate Division, USC School of Medicine, 2025 Zonal Ave., Los Angeles 33, CApital 5-1511, Ext. 9.

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## THE PHYSICIAN'S *Bookshelf*

**ANTISERA, TOXOIDS, VACCINES AND TUBERCULINS IN PROPHYLAXIS AND TREATMENT—Sixth Edition**—H. J. Parish, M.D., F.R.C.P.E., D.P.H. Formerly Clinical Research Director, Wellcome Research Laboratories, Beckenham, Kent, and D. A. Cannon, O.B.E., M.B., B.Sc., F.R.F.P.S.G., D.T.M. & H., Medical Adviser, Wellcome Research Laboratories, Beckenham, Kent; formerly Chief Pathologist, Federal Medical Department, Nigeria. Published for The Wellcome Foundation Ltd., by The Williams and Wilkins Company, Baltimore 2, Md. (exclusive U. S. agents), 1962. 315 pages, \$8.50.

The new (1962) edition of this manual retains much of the solid reference value of previous editions, as well as some of their quaint characteristics. Again there are full-page pictures of a horse being bled, of a media kitchen, and of masked men with glass bottles ("The three types of living virus suspension being blended to make poliomyelitis vaccine (oral)"). There is a long detailed discussion of manufacture standardization and application of various tuberculins, but no mention is made of other skin tests; e.g., coccidioidin, histoplasmin or the Ducrey test material.

Obviously the volume is primarily oriented toward readers in Great Britain, but it seems a somewhat imbalanced compilation for the physician in the United States. Such measures as "scarlet fever prophylactic" (1 page) or "leptospira antiserum" (1 page) will seem to most U. S. doctors unwarranted for lack of evidence.

Nevertheless, the book contains much valuable reference material and may be useful for some hospital libraries.

ERNEST JAWETZ, M.D.

\* \* \*

**DOCTOR AND PATIENT AND THE LAW—Fourth Edition of Dr. Louis Regan's book with same title**—C. Joseph Stetler, LL.B., LL.M., Member, Bar of District of Columbia and of Illinois; General Counsel and Director of Legal and Socio-Economic Division, American Medical Association; and Alan R. Moritz, A.M., Sc.D., M.D., Professor of Pathology and Director of the Institute of Pathology, Western Reserve University. The C. V. Mosby Company, St. Louis, 1962. 529 pages, \$14.75.

The revision of Doctor Louis J. Regan's original book of the same title by Mr. Stetler and Doctor Moritz, is outstanding in every way. The new text substantially changes and expands the earlier work and it reflects many of the things that have occurred in the twenty years that have elapsed since Doctor Regan's first edition was copyrighted.

"Rights and Duties of Physicians" is the title of Part I. Such things as state licensure, membership on hospital medical staffs and in medical societies, agreements to restrict the practice of medicine, statutory duties regarding reportable diseases and vital statistics, are thoroughly discussed and pertinent statutes and appellate cases cited.

It is in Part II that the rights and responsibilities of patients and physicians are discussed. Included are such basic concepts as the confidential relationship between physician and patient, the way in which a physician may properly withdraw from a case, the obtaining of consent

for treatment, autopsies, and the physician's role in various commitment proceedings.

The physician as a witness in a court proceeding is explained in Part III, and all facets of medical-professional liability are treated in Part IV.

This volume is well-written, balanced and legally sophisticated. It is one of the most complete summaries of medical jurisprudence yet written. Physicians and lawyers will find useful and interesting, this well-documented and accurate treatise.

WILLIAM M. WHELAN, LL.B.

\* \* \*

**TEXTBOOK OF VIROLOGY (for Students and Practitioners of Medicine—Fourth Edition)**—A. J. Rhodes, M.D., F.R.C.P. (Edin.), F.R.S.C., Director, School of Hygiene, University of Toronto; Professor of Microbiology, School of Hygiene, University of Toronto; and Consultant Virologist, The Hospital for Sick Children, Toronto; and C. E. van Rooyen, M.D., D.Sc. (Edin.), M.R.C.P. (Lond.), F.R.C.P. (C), Professor of Bacteriology, Dalhousie University; Bacteriologist, The Victoria General Hospital; Consultant Bacteriologist, Camp Hill Hospital, Department of Veterans Affairs; Consultant Virologist, The Canadian Forces Hospital, Halifax, N.S. (With the assistance of contributors). The Williams & Wilkins Company, Baltimore 2, Md., 1962. 600 pages, \$13.50.

This is a fourth edition of a standard textbook on virology for students and practicing physicians. Progress in the field has been so rapid that it has been almost completely rewritten. Not only has information about virus disease proliferated in a remarkable way, largely due to the introduction of techniques of tissue culture, but the total number of viruses known to cause disease is also rapidly increasing. For this reason, a text of this length is able to devote only a small amount of space to the individual groups of agents. Thus the vast flood of new information about enteric viruses other than poliomyelitis is included in 27 pages. More than 50 are devoted to the latter agent which is probably appropriate in relationship to the number of years of study that have been made of polio viruses, but it is probably not a proper distribution in terms of the student and physician who in the future will have far more to do with the other enteric viruses.

An immense amount of valuable information has been packed into this book. Particularly helpful is a table indicating the animal vectors of a large number of agents. There are also straightforward statements on the classification of the groups of the various viruses and many excellent photographs.

In summary, this is an excellent short textbook for students and practicing physicians. It contains all of the necessary information for an understanding of present relationships of viruses to disease. Quite appropriately, the clinical description is very brief and this text would necessarily be used as a corollary reading to a good textbook of medicine.

LOWELL A. RANTZ, M.D.

**DISEASES OF THE EAR, NOSE, AND THROAT IN CHILDREN**—Second Edition—T. G. Wilson, B.A., M.B., Litt.D., F.R.C.S.I., Hon. F.R.C.S. Edin., Hon. R.H.A., M.R.I.A., Past President Royal College of Surgeons in Ireland; Past President, Collegium Otorhinolaryngologicum Amicitiae Sacrum; Member, James IV Association of Surgeons; Surgeon-in-Charge, Ear, Nose and Throat Departments, Royal City of Dublin Hospital, Dr. Steevens' Hospital, and The National Children's Hospital, Dublin; Honorary Member of the Scottish Otolaryngological Society. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 351 pages, with illustrations by the Author, \$12.50.

Initially published in 1955, Mr. Wilson's text was the first written on the subject of pediatric otolaryngology since the publication of Alexander's book in 1917. The rather archaic original edition is concise and well organized, and offers good coverage of congenital anomalies, hearing and speech problems, laryngology, and broncho-esophagology.

Although the second edition contains a large number of well distributed, but minor changes, the only new sections are those dealing with congenital abnormalities of the external auditory meatus and the middle ear, cholesteatosis of the middle ear, and neonatal asphyxia.

Despite the inadequacy of the revisions of both the didactic and bibliographic sections, the new edition of Wilson's "Diseases of the Ear, Nose, and Throat in Children" contains a great deal of valuable material which has much to offer to those residents in pediatrics and in otolaryngology who are critical readers.

CHARLES P. LEBO, M.D.

\* \* \*

**PSYCHIATRIC INSURANCE: Financing Short-Term Ambulatory Treatment**—Helen H. Avnet, Group Health Insurance, Inc., New York, 1962.

This study, cosponsored by the American Psychiatric Association and the National Association for Mental Health, was financed by a National Institute of Mental Health grant. Coverage was offered at no extra premium to a sample of GHI membership, 30,000 subscribers and their dependents, a total of 76,000 persons. The study was undertaken to gain experience with a stable population utilizing a well-established health insurance plan.

Professional interest was high and participating psychiatrists agreed to the project fee. Despite considerable promotion and coverage from the first visit, psychiatric claims were filed by less than 1½ per cent of those covered (1,077) during the 30 months of the project and, consequently, service was sought from less than half the psychiatrists. Utilization rates decreased after the initial backlog of demand was satisfied. The new case experience was but 5 per 1,000 eligibles annually. Since usage fell far short of assumed need, some public resistance may be inferred. Over 400 persons advised of actual eligibility for benefits never became patients.

Coverage involved coinsurance, the fee (benefit:coinsurance) varying with the service such as: 45-minute office psychotherapy, \$20 (75:25 per cent), limit \$225; that is, 15 visits; hospitalization to 30 days at up to \$25 per diem (60:40 per cent); etc. Marital status, education and occupation were major variables; the unmarried, the college graduate and the professional being relatively high users.

Main referral sources were physicians—38 per cent and self—35 per cent, but the majority of psychiatrists—70 per cent stated they were not reporting to the patient's family physician; both referral and reporting reflecting less than desirable medical collaboration. Only 27 per cent of the patients sought treatment within six months of the onset of symptoms while 62 per cent of project cases had no prior experience with psychiatric treatment. Neurosis accounted for 42 per cent of the cases, psychosis 20 per cent, personality disorder 14 per cent, transient situational dis-

order 11 per cent, and all others 13 per cent. The sole criterion for acceptance was any condition treated by a psychiatrist.

Whether by type of service or demographic characteristic, the findings were clear that psychiatric patients used substantially more medical-surgical service than non-psychiatric patients (176 per cent) and this extended even to members of their family. For four out of five patients, individual office psychotherapy was the only form of treatment they received under the project (many of these had drug therapy at personal expense). But 6 per cent of project cases were hospitalized; 77 per cent of them having no prior such hospitalization. They stayed an average of 22.8 days, 39 per cent up to the 30-day limit allowed. Despite special arrangements made for day care and night care services they were never used. Electroshock was given to 7 per cent of patients, 7 per cent had psychological testing (mostly younger patients) and but 2 per cent had group therapy. Of the office limit cases (15 visits), it was noteworthy that two thirds continued treatment privately without project aid.

The average cost per terminated case was \$186. Benefits were not renewable; if so, a margin of 50 per cent might have been added to second year costs. A rough conversion to the cost per subscriber for annually renewable services at project limits yields an encouraging figure of 36c per month (allowing 25 per cent for operating and administrative costs). The main conclusion of the study then, "that short-term, ambulatory, psychiatric treatments are insurable," is certainly warranted. Such findings call for action—the provision of coverage for mental disorder in all health insurance policies.

HERBERT DÖRKEN, Ph.D.

Deputy Director

Liaison and Prevention Services  
State of California Department  
of Mental Hygiene

\* \* \*

**RESEARCH APPROACHES TO PSYCHIATRIC PROBLEMS**—A Symposium—Tenth Anniversary Symposium of The Galesburg State Research Hospital, October 21 and 22, 1960, Galesburg, Illinois. Edited by Thomas T. Tourlentes, M.D., Seymour L. Pollack, M.D., and Harold E. Himwich, M.D. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 238 pages, \$5.50.

This small book consists of a collection of papers which were presented at the Tenth Annual Symposium on Biological Psychological and Sociological Approaches to Current Psychiatric Problems held in Galesburg, Ill., in October, 1960. The individual contributions attempt to summarize some of the principal thoughts and promising trends of the past ten years.

The development of concepts of organization and function of the brain is traced in a scholarly manner by Magoun from Greek antiquity to the present. M. Vogt reviews the theories and facts about the functional role of noradrenaline, serotonin, and other amines found in mammalian brain and concludes that present knowledge about the functional role of the brain is almost nil. Lehmann and his associates report on their quite original studies of the effects of psychotropic drugs in biological systems of low complexity. The drugs were secobarbital, dextroamphetamine, chlorpromazine, prochlorperazine, LSD-25 and imipramine. The biological systems studied were grouped into those primarily representing metabolic processes, or growth, or reactive phenomena. They were urease-urea hydrolytic enzyme system, the luciferaase-luciferine oxidase system (of fire flies), proteus bacteria cultures, He La cell tissue cultures, oat seedlings raised in darkness, the hydra feeding reflex and dandelion sleep movements. Differential effects were noted



with different concentrations of the drugs at the cellular level. For example, in four of the seven different systems, dextroamphetamine produced more inhibition at a lower than at a higher concentration. Their findings offer the possibility of new ways of classifying psychotropic substances and suggest that meaningful relationships exist between the reactions of organisms possessing a nervous system and biological systems of low complexity.

Recent developments in the field of genetics and their relationship to psychiatric disorders is concisely reviewed by Kallman. He summarizes the irregularities in the sex chromosome complement that have been found in Turner's and Klinefelter's syndromes, mongolism, "superfemales" and special variants of these disorders and predicts that further research at the molecular and chromosomal levels will greatly enhance understanding of human disorders of behavior.

Benjamin reports on an intensive study of two identical twins who manifested physiological differences at birth which appeared to contribute to a differential reaction on the part of the mother and thus to different experiences in their early object relations. He demonstrates the difficulty in separating hereditary and environmental factors when they are so intimately related in their interaction.

Other chapters dealing with the epidemiology and biochemical study of schizophrenia, sensory deprivation, the effects of heart disease and cardiac surgery on psychologic and neurologic functioning, interviewing, physiological responses to experimental stress and the psychosexual development of Macaque monkeys under experimental conditions, contribute to the achievement of the expressed goal of the editors—the review of the main streams of research in psychiatry today. For those who are interested in current directions of psychiatric research, the book will prove informative, interesting and rewarding.

NORMAN Q. BRILL, M.D.

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**PHARMACOLOGY AND THERAPEUTICS—A Text-book for Students and Practitioners of Medicine and Its Allied Professions—Fifth Edition, Revised and Enlarged, 236 Illustrations with 2 in Color—Arthur Grollman, Ph.D., M.D., F.A.C.P., Lecturer in Pharmacology and Toxicology, The Medical Branch, and Professor and Chairman of the Department of Experimental Medicine, The Southwestern Medical School, The University of Texas. Lea & Febiger, 600 Washington Square, Philadelphia 6, Pa., 1962. 1131 pages, \$12.50.**

This latest edition of Grollman's popular textbook is as sound and up-to-date and complete as such a book can be and stay in the practical price range. Written by an experienced pharmacologist who is also a clinician, the book offers the student and practicing physician not only the essentials (and more) of the basic science of pharmacology, but also a selection of drugs and clinical interpretation which removes the mystery from bedside therapeutics. The abundant photographs, graphs and tables illustrate well many phenomena of drug action which are difficult to describe in words and are carefully selected from articles of leading pharmacologists, chemists and clinicians, including many from the author's own publications and classroom results.

By judicious revisions and deletions, Professor Grollman has succeeded in including all important new drugs introduced since the preparation of his previous edition without enlarging the book. He retains the same order of discussion and classification of drugs as in earlier editions.

In the first part of the book there is an amplification of the discussion of the theory of drug action on the basis of cell receptors and competitive antagonism and other

types of competition and the relation of chemical constitution to pharmacological action. Under the title of Drug Synergism the idea has been carried further to cover antagonism of such drugs as pilocarpine and atropine, the antihistamines and the potentiation of epinephrine action by cocaine. There is also an enlarged discussion of types of side effects and toxic actions and of the meaning of the therapeutic index. In the main body of the text, there has been an amplification of the important subject of salicylate poisoning, with emphasis on the need for potassium and the dangers of the standard alkali therapy. The discussion of the actions and uses of tranquilizers and monoamine oxidase inhibitors has been extended and especially helpful is the chapter on vasodilators and other drugs used in the treatment of angina pectoris and hypertension.

The difficult subject of actions and uses of digitalis is handled clearly, except that statements concerning the effect of digitalis on the refractory period on page 464 seem to be contradictory.

The chapter on anesthesia could have been improved by giving more space to halothane and less to the almost obsolete tribromoethanol. Although the effects of thalidomide on the fetus were already recognized when the book went to press, no mention is made of this fact and only the somnifacient effects are emphasized. A few typographical errors were noted.

CLINTON H. THIENES, M.D., Ph.D.

\* \* \*

**CURRENT THERAPY—1963—Latest Approved Methods of Treatment for the Practicing Physician—Edited by Howard F. Conn, M.D. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1963. 775 pages, \$12.50.**

This latest edition of *Current Therapy* carries on the excellent tradition set by Dr. Conn when he established this series of annual volumes some years ago. There is sufficient change in the authorities writing various chapters so that it keeps a certain degree of freshness in the presentations. Anyone who keeps several consecutive volumes in this series will by reviewing the same subject in each of them have the opinions of methods of therapy by outstanding authorities in this country.

Specialists as well as those in general practice will find it very useful to refer to this volume on numerous occasions. The more they practice medicine the more they will refer to it.

DWIGHT L. WILBUR, M.D.

\* \* \*

**CURRENT DIAGNOSIS AND TREATMENT, 1962—Henry Brainerd, M.D., Professor of Medicine and Chairman, Department of Medicine, University of California School of Medicine (San Francisco) and Physician-in-Chief, University of California Hospitals (San Francisco), Sheldon Margen, M.D., Research Biochemist, Department of Biochemistry, University of California School of Medicine (San Francisco), and Milton J. Chatton, M.D., Assistant Clinical Professor of Medicine, University of California (San Francisco) and Stanford University (Palo Alto) Schools of Medicine, and Geriatric Consultant, Palo Alto Medical Clinic (and Associate Authors). Lange Medical Publications, Los Altos, Calif., 1962. 758 pages, \$8.50.**

As medical knowledge continues to expand this excellent handy reference has continued to grow and grow until it is no longer possible for one to stuff it into one's pocket. Some of its usefulness is thereby impaired. However, the contents are as up to date and relevant as ever. As a handy and immediate guide for the student or practitioner it has no superior.

Perhaps the next edition should consist of two smaller books, one for each pocket.



A.W., age 62—Psoriasis: 4 years' duration...cleared in 11 days<sup>†</sup>

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Nierman, M. M.: Triamcinolone in Psoriasis and Other Dermatoses, A New Method of Topical Application. Scientific Exhibit Presented at the Clinical Meeting of the American Medical Association, Los Angeles, California, November 25-28, 1962.

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## New Heart Pacing Technique Used In Emergencies and Surgery

(Continued from Page 29)

Use of the method in more than 40 patients was described in articles by I. Richard Zucker, M.D., Victor Parsonnet, M.D., Lawrence Gilbert, M.D., and Maxim Asa, Ph.D., Newark, N. J., Beth Israel Hospital, and Roman W. DeSanctis, M.D., Massachusetts General Hospital, Boston.

Because of age and complicating conditions, the Newark researchers said, patients requiring heart pacing are frequently too poor operative risks to withstand implantation of a pacemaker in the heart muscle since this procedure involves a chest incision and sewing the pacemaker to degenerated muscle. The intravenous technique offers a solution to the problem of preparing these patients for surgery or for controlling the heart beat during anesthesia and operation, they said.

"We have found that subsequent major operation is uneventful when the heart rate is controlled during the procedure," they said.

The researchers reported on 33 procedures performed in 26 patients ranging from 2 days to 82 years of age.

With the patient under local anesthesia, the electrode was introduced into the jugular or other vein and positioned in the right ventricle under image-intensifying fluoroscopic visualization, they said.

Several hours later, they said, the patient could be out of bed and on the following day, most patients were ambulatory. There was a striking disappearance of fatigue and muscular weakness, they said.

Dr. DeSanctis reported on a series of 16 patients, 12 of whom underwent the procedure as an urgent measure for heart block after drug therapy proved ineffective. In 10 of the 12, he said, fainting spells and weakness promptly ceased. These patients had suffered a total of about 120 such attacks while in the hospital prior to use of the intravenous pacemaker, he said.

Summarizing his experience with the 16 patients, nine men and seven women ranging in age from 50 to 83, Dr. DeSanctis said the technique usually provides a very satisfactory means of handling patients with heart block when drugs are ineffective.

The electrode can, as a rule, be introduced easily under local anesthesia, even in severely ill patients, he said. The stimulating current is usually in the order of one to four milliamperes, one millionth of an ampere, and are not felt by the patient, he said. However, he stressed that the procedure was "not without hazard."

Although the ideal treatment of heart block has not been achieved, the *Journal* editorial said, pace-making by intravenous electrode represents one more important steppingstone toward that goal.



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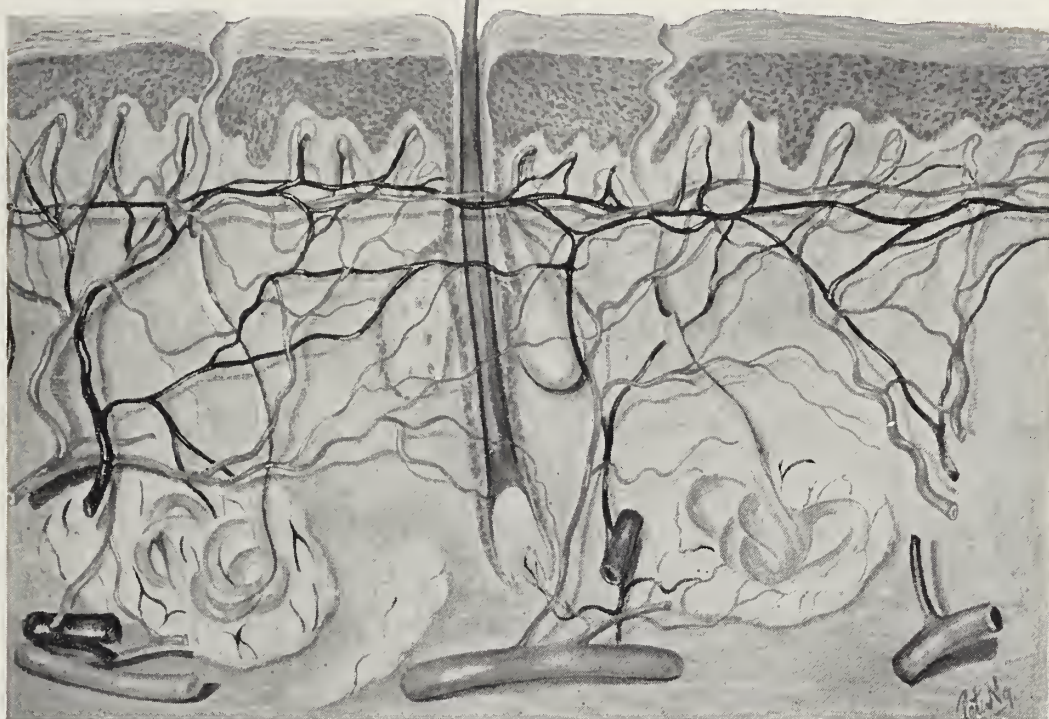
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## Compulsory Medical Care Would Destroy Freedoms

Any scheme for compulsory medical care could be imposed on a Western democracy only by destroying individual liberty and freedom from voluntary servitude, the very essence of Western democracy, according to Dr. C. K. Higgins, Calgary, Alberta, Canada.

Dr. Higgins, writing in the May 18 *Journal of the American Medical Association*, pointed out that "the rights of the individual lie at the core of our political, legal, moral and spiritual heritage."

"The right of a person to sell his labor and services upon such terms as he deems proper is the very essence of individual freedom, and, conversely, a denial of this right is the very essence of slavery," Dr. Higgins said.

He said that if a physician agrees to a program of compulsory medical care, he relinquishes personal freedom, or "the right to bargain for his labor and services—and his liberty as an individual."

"If he does not agree to relinquish a basic freedom and the state compels the physician to provide the medical service by threats, coercion or legislation, it does so by an abrogation of liberty and an imposition of servitude," Dr. Higgins said.

The Canadian physician said the issue involves the rights of a minority group in a democracy, adding:

"The basic argument against compulsory state medicine is that it abrogates the rights of those receiving the care and more especially those providing the care. All else is a consequence of the violation of these basic rights and freedoms.

"It is indeed incongruous that citizens who have striven centuries for the right to bargain for their services would now propose to abrogate the right of a minority group to bargain for theirs."

Dr. Higgins said that "any legislation purporting only to appropriate money to pay for a 'free' service can and must contain effective control of the individuals, groups, professions or institutions rendering the 'free' service. There is no more effective way to exercise control than by a control of income—a power over a man's subsistence amounts to a power over his will."

"The great problem of democratic political and legal thought has been the reconciliation of popular will with individual rights and, in particular, of the rights of the majority with respect to those of the minority," he said.

"The majority may desire to oppress a minority, and precautions are needed as much against this form of oppression as against any other abuse of power," he said. "Philosophers and patriots have repeatedly warned mankind to guard against unchecked majority rule," he said.

"The medical profession in the United States

*Recent reports suggest...insulin and sulfonylureas may accelerate lipogenesis, fat accumulation, weight gain; thus appear to aggravate obesity in diabetics<sup>1-5</sup>...serum "insulin" levels are often elevated in obese diabetics<sup>2,3,6</sup>...DBI (phenformin HCl) reduces high blood sugars, lowers elevated "insulin" levels, tends to reduce body weight toward normal.<sup>1,3,7-9</sup>*

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should make it clear that in its criticism of and resistance to compulsory state medicine, it is merely acting now in the forefront of the battle carried on for almost two centuries to ensure the continuance of those inalienable rights granted to American citizens in the Declaration of Independence and in the Fifth and Thirteenth Amendments to the Constitution," he said.

"The fundamental moral and legal issue in the controversy over universal compulsory health services, controlled and operated by the state, is not the issue of goodness or badness of ends. *The fundamental issue is the rightness or wrongness of means.*

"The implications of this issue extend far beyond the rights of physicians and the quality of medical care.

"They involve the freedom of citizens in all professions and vocations."

### Climate Offers No Escape From Colds or Flu

Moving to another climate to avoid colds or other respiratory infections does not appear to be worthwhile.

This is the opinion of two consultants published in the Question and Answer section of the May 11 *Journal of the American Medical Association*.

Dr. Harold L. Israel, Philadelphia, said there is a paucity of information concerning the incidence of

acute respiratory infections but the available statistics suggest that all regions of the United States have essentially the same frequency of these illnesses.

Dr. Alvan L. Barach, New York City, said the incidence of respiratory infections is not so significantly altered in various regions of the United States as to warrant a change of climate for patients who suffer recurrent colds.

"Exposure to crowds, which does enhance the chances of bacterial and virus infection, may occur in the South as well as the North," he said.

Newer methods of treatment provide a better approach to the management of the patient with recurrent colds than changes of climate, he said.

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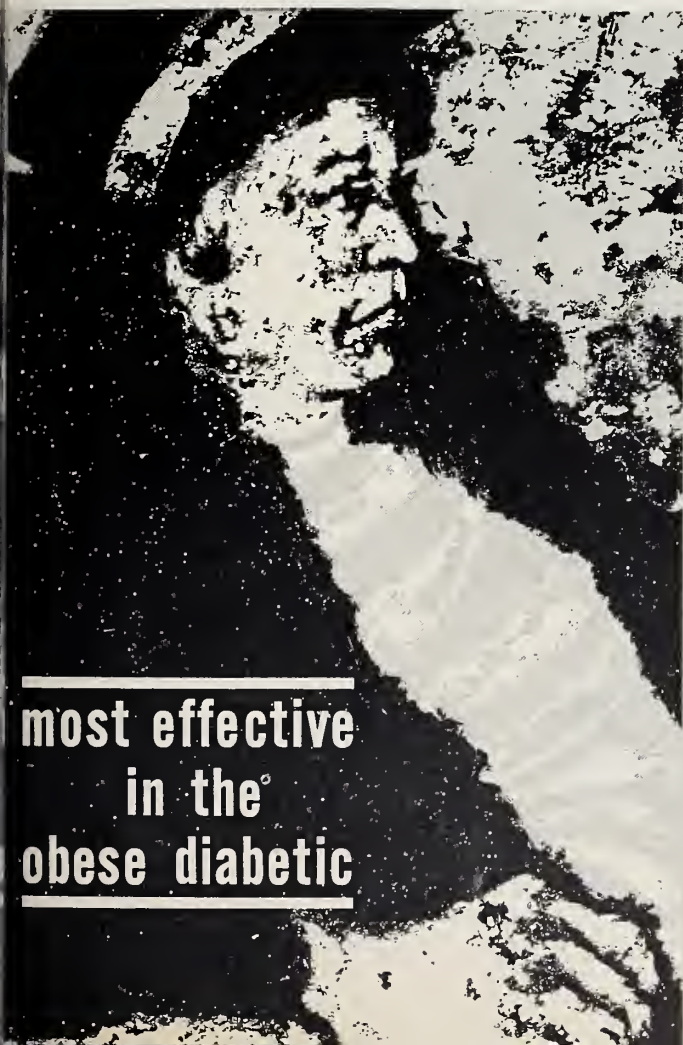
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administered to ketoacidosis-resistant diabetics requiring hypoglycemic therapy: A. act to reduce high blood sugar without increasing fat synthesis or weight gain as insulin and sulfonylureas tend to do. B. do not increase already elevated endogenous insulin levels; may, indeed, act to restore more normal insulin levels. C. favor reduction of weight towards normal.

Insulin is still the essential hypoglycemic agent for the ketoacidosis-prone diabetic. However, in the ketoacidosis-resistant obese diabetic phenformin appears to be the hypoglycemic of choice to help avoid weight gain or reduce adiposity, a factor tending to make control more difficult and to increase the likelihood of complications.

Summary: Indicated in stable adult diabetes, sulfonylurea failures and unstable diabetes. Gastrointestinal side effects occurring more often at higher dosage levels abate promptly upon dosage reduction or temporary withdrawal. Occasionally an insulin-dependent patient will show "starvation" ketosis (acetoneuria without hyperglycemia) which must be differentiated from "insulin-lack" ketosis, and treated accordingly. Use with caution in severe liver disease. Not recommended without insulin in acute complications (acidosis, coma, infections, gangrene, surgery). Consult product brochure for full information.

Bibliography: 1. Williams, R. H.: Textbook of Endocrinology, Ed. 3, Saunders, Philadelphia, 1962, p. 610. 2. Gordon, E. S.: Metabolism 11:819, 1962. 3. Grodsky, G. M. et al.: Metabolism 12:278, 1963. 4. Sadow, H. S.: Metabolism 12:333, 1963. 5. West, K. M. and Tophoj, E.: Metabolism 10:689, 1961. 6. Yalow, R. S. and Berson, S. A.: Diabetes 9:254, 1960. 7. Weller, C. et al.: Scientific Exhibit, A.M.A., June 1962. 8. Weller, C. et al.: Metabolism 11:1134, 1962. 9. Radding, R. S. et al.: Metabolism 11:404, 1962.

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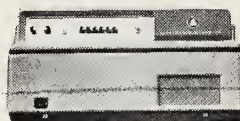


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## REFERENCES AND REVIEWS

ENZYME HISTOCHEMISTRY OF THE HUMAN THYROID GLAND—S. Lindsay and I. Arico. Arch. Path., 75:627 (June) 1963.

The activity of 19 enzymes was studied by histochemical methods in 100 normal and pathological human thyroid glands. There was no evidence that the enzyme systems demonstrated were specifically related to the synthesis of thyroid hormones. Epithelial proliferative processes usually showed greater enzyme activity, which was believed to be related to growth or some other metabolic function of the thyroid epithelial cells.

\* \* \*

TRIPLE FIXATION SUTURE IN OPERATIVE GYNECOLOGY—T. A. McLennan. Canad. Med. Assn. J., 88:895 (April 27) 1963.

A secure, 3-point fixation suture for large tissue pedicles is described. It is particularly applicable to vaginal hysterectomy, but it is also useful during abdominal hysterectomy.

\* \* \*

SIMPLE HEMOLYSIS TEST FOR CLASSIFICATION OF MYCOBACTERIA—K. Takeya. Amer. Rev. Resp. Dis., 87:773 (May) 1963.

A simple hemolysis test for classifying mycobacteria was devised; it was applied in the examination of 111 strains of mycobacteria. All strains of *M. kansasii* and several saprophytes were found positive in the test, while all

human, bovine, avian, murine stains, nonchromogens, scotochromogens, and photochromogenic strains isolated from tropical fishes gave negative reactions. Biologic properties characteristic of *M. kansasii* were discussed.

\* \* \*

COXSACKIE A9 INFECTIONS WITH EXANTHEMS WITH PARTICULAR REFERENCE TO URTICARIA—J. D. Cherry, A. M. Lerner, J. O. Klein and M. Finland. Pediatrics, 31:819 (May) 1963.

Five cases of Coxsackie A9 virus infections with exanthems are described. Three of these are of particular interest because urticarial lesions were present; vesicular eruptions were noted in 2 of these cases.

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1. Ford, R. A., and Blanchard, K. P.: J.-Lancet 78:185, 1958.

Precaution: Occasionally, mild salicylism may occur, but this responds readily to dosage adjustment. In the presence of severe renal

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## Encouraging Reports on Two Measles Vaccines

Both the killed and live virus measles vaccines have proved highly effective in separate studies reported in the June 1 *Journal of the American Medical Association*.

Two and three injections of the killed virus vaccine were effective in 98 and 100 per cent of their respective test groups while a single injection of a highly attenuated live virus vaccine produced immunity in 97 per cent of vaccinees.

The killed virus vaccine was studied in 601 children up to 13 years of age by Drs. Samuel Karelitz, Benjamin C. Berliner, Michael Orange, Saree Penbarkkul, Angela Ramos and Pensri Muenboon, Long Island Jewish Hospital, New Hyde Park, N. Y.

In 250 children given one dose, they said, immunity was produced in 66.8 per cent. In 39 given two doses a month apart, 98.9 per cent were immunized, they said, and in 106 given three monthly doses, the vaccine was 100 per cent effective. The remaining 156, who had some degree of immunity prior to vaccination, showed a rise in the level of measles antibody, they said.

A few instances of local swelling and discomfort at the site of injection were noted, the researchers said. Fever on the day after vaccination was infrequent, they said.

In the two years which have elapsed since the

study began, they said, no natural measles has been observed in a child who had two or three doses of the killed virus vaccine. However, they said, there were several cases, some modified, among those who had only one shot.

During the course of the study, in 1961 and 1962, there were epidemics of measles in Nassau and Queens counties, New York, where children taking part in the study lived, they said. It is likely that many of these children had intimate exposure to natural measles virus, they said.

Another aspect of the study involved the reaction of children given one, two or three doses of the killed virus vaccine followed by a dose of a live measles virus vaccine.

Among 296 children given one dose of the inactivated vaccine, 15 per cent developed a fever and 3 per cent a transient rash following administration of the live vaccine, it was reported. Among 117 children given two killed vaccine shots, fever occurred in 8 per cent and rash in two patients following the live vaccine challenge; and of 75 children given three killed vaccine shots, one had fever and one a rash after receiving the live vaccine, according to the *Journal* report.

Either two or three killed vaccine doses followed by a live vaccine dose appears to be "simple, safe, and effective," the researchers concluded.

The paucity of reactions to challenge with live

(Continued on Page 22)

## In rheumatoid arthritis..



**Patient:**  
56-year-old woman with generalized rheumatoid arthritis of 7 years' duration.  
**X-ray:** Skin prepared with barium sulfate; tube distance 36 inches, 50 ma. sec. at 40 kv.; no screen.



## Danger of Rabies from Cat Bite Said to Last Only Four Days

The period during which a rabid cat can transmit the disease by biting a human being may last only four days, a study indicated recently.

Three Tulane University researchers who studied 26 cats with rabies said rabies virus was found in cat saliva from one day before the cat became ill to three days afterward.

Therefore, they said, it is believed that a true exposure to rabies would not have occurred for a person who had been bitten by these cats before the day preceeding the appearance of illness in the cat.

To transmit the disease, the virus must be present in the saliva when the bite occurs or the saliva must come in contact with a fresh scratch or cut in the skin, John B. Vaughn, D.V.M., Phyllis Gerhardt, B.A., and J. C. S. Paterson, M.D., New Orleans, wrote in the June 1 *Journal of the American Medical Association*.

The recommendation of the World Health Organization (WHO) Expert Committee on Rabies is that the animal, if healthy at the time of the bite, be observed for 10 days and if it is proven to be rabid, the rabies vaccine be administered to the person who was bitten, the researchers said.

Although this study may not be regarded as a sufficient basis for changing the WHO recommendation, they said, their findings may encourage investigators to make similar studies on a larger scale.

In addition to reducing the risks associated with administration of rabies vaccine, they said, a more precise determination of the period in which the virus is present in cat saliva would contribute greatly to the peace of mind of physicians and of potentially exposed patients.

Studies with dogs have shown that no true exposure to rabies occurred in a person if the biting dog showed no signs of rabies within five to seven days after the bite, they said.

## Decorative Houseplant Presents Hazard

A decorative houseplant, termed *Dieffenbachia* and sometimes called "dumb cane," can produce "alarmingly severe" symptoms if taken into the mouth, two Cleveland physicians warn.

A child or uninformed adult could be subjected to unnecessary sickness or death by ingestion of this common potted plant, Drs. George Drach and Walter H. Maloney said in the June 29 *Journal of the American Medical Association*.

Ingestion may result in severe corrosive burns of the mouth, throat, esophagus and stomach, they said. Generalized complications arise from absorption of its main toxic component, oxalate, they said.

The number of these plants present in homes can scarcely be estimated and *Dieffenbachia* also is used in public places, the physicians said.

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**product profile**—DEXAMETH (dexamethasone) is a glucocorticoid with exceptional anti-inflammatory and antiallergic activity. With certain exceptions, the drug produces the same metabolic and hormonal side effects as other corticoids; it should therefore be used with great caution in the presence of tuberculosis and other infections, osteoporosis, peptic ulcer, fresh intestinal anastomoses, diverticulitis, thrombophlebitis, herpes simplex, psychotic tendency, pregnancy and in persons exposed to chickenpox, measles or scarlet fever. It is contraindicated in ocular herpes simplex, arthritis complicated by psoriasis, tuberculosis of the eye and skin, fungal keratitis, and local pyogenic infection. Before prescribing, consult product brochure.

**Dosage:** In rheumatoid arthritis, the initial daily dosage ranges from 2 to 4 tablets (1.5 to 3.0 mg.). The dosage is then decreased gradually to the minimum that will maintain sufficient relief; this may be as little as 1 tablet (0.75 mg.) per day. After extended therapy, it is especially important that the drug be withdrawn gradually to allow recovery of normal adrenal function.

1. Boland, E. W.: J.A.M.A. 17:835 (Oct. 15) 1960. 2. Black, R. L., et al.: Arthritis and Rheumatism 3:112 (April) 1960.



**the nervous vomiter...**







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### Restrictions Recommended On Use of LSD-25

The use of LSD-25, an experimental drug which causes visual and mental distortion, should be restricted to investigators in institutions and hospitals, two Los Angeles physicians recommended recently.

"Until the indications, techniques, and precautions are better understood, LSD therapy should be restricted to investigators in institutions and hospitals where the patient's protection is greater and appropriate countermeasures are available in case of adverse reactions," Drs. Sidney Cohen and Keith S. Ditman wrote in the May *Archives of General Psychiatry*, published by the American Medical Association.

Although the actual incidence of serious complications following LSD administration is not known, they said, they believed that complications are "infrequent."

"In the majority of the cases who developed complications the drug had been obtained from improper sources," they said.

As they reported originally in the *Journal of the American Medical Association* last year, the researchers reiterated that "a black market exists in this country, and tablets, ampules, and sugar cubes saturated with LSD have become available in the large cities and on some university campuses." Some supplies are obtained from Mexico and other foreign countries, they said.

"It appears that antisocial groups have embraced LSD and mescaline in addition to marihuana, the amphetamines, the barbiturates, and the narcotics," they said. "Since the LSD state can be a shattering one psychologically, these individuals may sustain severe undesirable reactions. Easy access to the drug will result in its accidental or deliberate administration to people without their knowledge, and this can be a devastating event."

The authors described several cases of prolonged psychotic reactions, severe depressive and anxiety states, and intensified sociopathic behavior following use of the drug.

In some persons with latent grandiose ideas, they said, the drug results in intense feelings of unity, death and rebirth, salvation and redemption.

"After the drug effects have worn off, the megalomaniacal belief that the individual has been chosen to convert others to the new faith may be retained," they said. "Small LSD sects have been established on this basis. The leaders gain considerable gratification out of their position of omnipotence which includes granting their disciples the LSD experience."

Such persons in the role of religious leaders or lay therapists can become quite successful in controlling others, they said.

At the same time, the researchers emphasized the importance of continued study of LSD and allied

(Continued on Page 26)

Abscess  
 Acne  
 Amebiasis, acute, intestinal  
 Anthrax  
 Bacillary dysentery  
 Bacteremia  
 Bartonellosis  
 Bronchitis, acute  
 Bronchopulmonary infection  
 Brucellosis, acute  
 (IN COMBINATION WITH OTHER  
 ANTIMICROBIAL AGENTS)  
 Chancroid  
 Diphtheria  
 (IN CONJUNCTION WITH ANTITOXIN  
 AND ROUTINE ESTABLISHED THERAPY)  
 Endocarditis, subacute, bacterial  
 Genitourinary infection  
 Gonorrhea  
 Granuloma inguinale (DONOVANSIS)  
 Infections associated  
 with pancreatic fibrosis  
 Listeriosis  
 Lymphogranuloma venereum  
 Meningitis, purulent  
 Mixed bacterial infection  
 Osteomyelitis  
 Otitis  
 (EXTERNA OR MEDIA)  
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STAPHYLOCOCCI

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GONOCOCCI

SHIGELLAE

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and, in particular, with certain  
 species of tetracycline-sensitive  
 microorganisms such  
 as the following:

HEMOPHILUS INFLUENZAE

STREPTOCOCCUS PYOGENES

DIPLOCOCCUS PNEUMONIAE

CORYNEBACTERIUM DIPHTHERIAE

ESCHERICHIA COLI

Surgical and dental preoperative  
 and postoperative prophylaxis

Syphilis

(WHERE THE PATIENT IS PENICILLIN-SENSITIVE)

Typhoid fever

(WHEN CHLORAMPHENICOL IS CONTRAINDICATED)

Agammaglobulinemia or hypogamma-  
 globulinemia and recurring infections

(WITH GAMMA GLOBULIN THERAPY)

**ACHROMYCIN® V**  
 TETRACYCLINE HCl WITH CITRIC ACID

SIDE EFFECTS (infrequent and usually mild): glossitis, stomatitis, proctitis,  
 nausea, diarrhea, vaginitis, dermatitis, overgrowth of nonsusceptible organ-  
 isms. CONTRAINDICATIONS: None, but the following precautions should be  
 observed: high-calcium-content foods or drugs should not be taken for at  
 least one-half hour after each dose; avoid excessive accumulation of anti-  
 biotics by reducing dosage in patients with impaired renal function; consider  
 possibility of discoloration of teeth during tooth development (late preg-  
 nancy, infancy or early childhood).

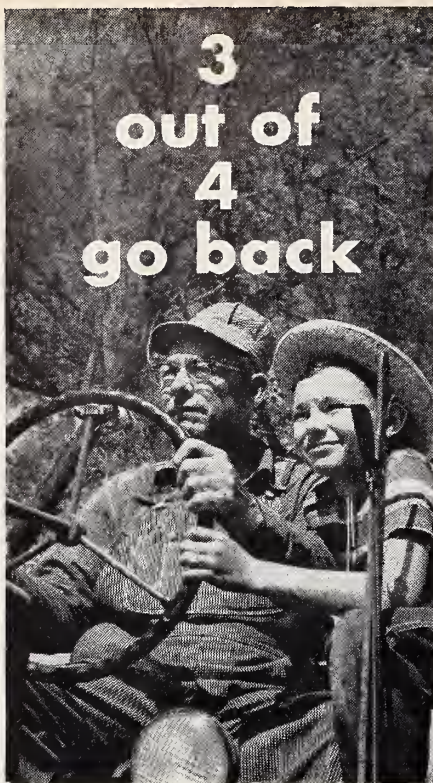
CAPSULES—250 mg. and 100 mg.; SYRUP; PEDIATRIC DROPS.



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## Encouraging Reports on Two Measles Vaccines

(Continued from Page 10)

virus, the high levels of antibody which follow the challenge in 99.7 per cent of the subjects, and the resistance of many of the children to exposure to wild measles virus during epidemics recommends this regimen, they said.

The live vaccine study, in which a highly attenuated virus strain was used, was reported by Drs. Samuel L. Andelman, Morten B. Andelman, and Jack Zackler, Chicago, and Anton Schwartz, Indianapolis.

The efficacy of the vaccine was not affected by the modification, they said, since it produced a significant antibody response in 97.5 per cent of 79 children vaccinated.

To determine the rate of reactions to the vaccine, a double blind study involving 127 children from nine months to five years of age was conducted in which 79 received the vaccine and 48 a dummy shot, the researchers reported.

Each child was examined for fever, rash, Koplik's spots or any other symptoms by a pediatrician following the vaccination, they said. No local or immediate reactions were observed in any of the children, they said.

Among the vaccinated children, two and a half per cent had a temperature response of 103 degrees Fahrenheit or above compared with 2 per cent of the group given the innocuous injection, they said. In 11 per cent of the vaccinated group, a mild, short-lived rash was observed while no rash was seen in the control group, they said.

In addition, the Chicago researchers inoculated 475 children aged 1 to 14 to determine the safety of the live virus vaccine. In more than 90 per cent of this group, no fever was reported by parents, they said. However, they said, a mild rash was reported in about 5 per cent.

"Since one injection of this vaccine seems to produce immunity against measles without causing a large number of undesirable reactions, this vaccine appears to be the most practical measles preventive at this time," the researchers concluded.

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RAUWILOID's (alseroxylon) simple dosage . . . gradually lowers blood pressure . . . decreases heart rate . . . and insulates the anxious hypertensive from pressure-raising tensions.


Each tablet contains 2.0 mg. of the alseroxylon fraction of Rauwolfia serpentina, benth.

For complete information regarding use; see P.D.R. '63. Professional literature also available on request.

**CAUTION:** There are no known contraindications except for rare hypersensitivity to the medication. Mental depression, so often seen with reserpine (a single alkaloid) is considerably less common with RAUWILOID (alseroxylon), as are nasal stuffiness and increased gastrointestinal activity. Paranoid depression may occur as a result of the administration of Rauwolfia preparations. Rauwiloid (alseroxylon) should be administered with caution in the presence of peptic ulcer or endogenous depression.



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h.s.**



### **American Nursing Home Association Organizes New Council And Board of Directors**

A National Council for the Accreditation of Nursing Homes, jointly sponsored by the American Medical Association and the American Nursing Home Association, has been organized to carry out a nationwide program to promote high standards among nursing homes.

Organization of the new council, including the appointment of a nine-member Board of Directors, was completed at a meeting of representatives of the A.M.A. and the A.N.H.A. in Chicago in May.

The Board of Directors is composed of five physicians and four owners and operators of nursing homes.

Physician members are Dr. H. Close Hesselstine, Chicago; Dr. Pierre Salmon, San Mateo, Calif.; Dr. Wilson T. Sowder, Florida State Health Officer, Jacksonville, Fla.; Dr. Thomas McCreary, Rochester, Pa., and Dr. Frederick C. Swartz, East Lansing, Mich.

Nursing home representatives on the board are Alton Barlow, Canton, N. Y.; Mrs. Eleanor Baird, New Milford, Conn.; Mrs. Vesta Bowden, Denver, Colo., and Mrs. Pauline Williams, Phoenix, Arizona.

The National Council for the Accreditation of Nursing Homes will be headquartered in Chicago, with a full-time executive director to administer the

program. The executive director has not yet been selected.

Mrs. Baird was named chairman of the Board of Directors, and Dr. Hesselstine was selected as vice-chairman.

Mrs. Baird pointed out that nursing homes are becoming increasingly important in health care with the rising population of older citizens and the wider use of nursing homes for convalescence and care of the chronically ill.

She said that a national accreditation program which recognizes nursing homes of high standards will serve to raise standards in all nursing homes.

The number of skilled nursing homes increased from 7,000 in 1954 to 9,700 in 1961, with a total bed capacity increase from 180,000 to 338,700.

### **Restrictions Recommended On Use of LSD-25**

(Continued from Page 16)

drugs so that their advantages and limitations are eventually understood.

"It is our impression that they are unique tools in the study of altered states of awareness, perception, and ideation," they said.

LSD-25, the short name for lysergic acid diethylamide, is a derivative of the fungus, ergot. It is distributed by the manufacturer only for scientific investigations.



*Coca-Cola*, too, is compatible with a well-balanced menu. As a pure, wholesome drink, it provides a bit of quick energy..brings you back refreshed after work or play. It contributes to good health by providing a pleasurable moment's pause from the pace of a busy day.



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AVERAGE DOSE: 0.5 Gm. at bedtime. Total daily dosage over 1 Gm. not recommended for continuing therapy.

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SUPPLIED: *Tablets*, 0.5 Gm., 0.25 Gm., and 0.125 Gm. *Capsules*, 0.5 Gm.

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### J.A.M.A. Publishes Editorial on Conference on Analgesics

A conference of experts summoned to assess reports of a possible relationship between gross overuse of pain-relieving drug mixtures and kidney disease has concluded that there is no more than circumstantial evidence and recommended further studies.

Medical reports, appearing during the past 10 years primarily from other countries, have suggested a link between analgesics and kidney disease but only when the drugs were taken in extremely large doses over a long period of time.

There has been no evidence of any harm resulting from normal doses of such preparations of which thousands are sold direct to the public in this country.

An editorial on the one-day conference, called by the Committee on Scientific Activities of the American Medical Association's Board of Trustees and held in Washington, D. C., in February, was published in the May 11 *Journal of the American Medical Association*. Attending the conference were kidney specialists from this country and Europe, representatives of the Food and Drug Administration and others knowledgeable on the subject.

One specialist reported to the conference that a questionnaire survey among other specialists and his own personal experience led him to conclude that there was not a large number of undetected cases of kidney disease which could be related to abuse of analgesics in the United States.

Most of the medical reports suggesting a link between analgesics and kidney disease have emphasized phenacetin, according to the *Journal* editorial. However, the conference was told that a review of these reports indicated clearly that evidence of kidney disease from phenacetin or other analgesics is circumstantial, i.e., no cause and effect relationship has been scientifically proved.

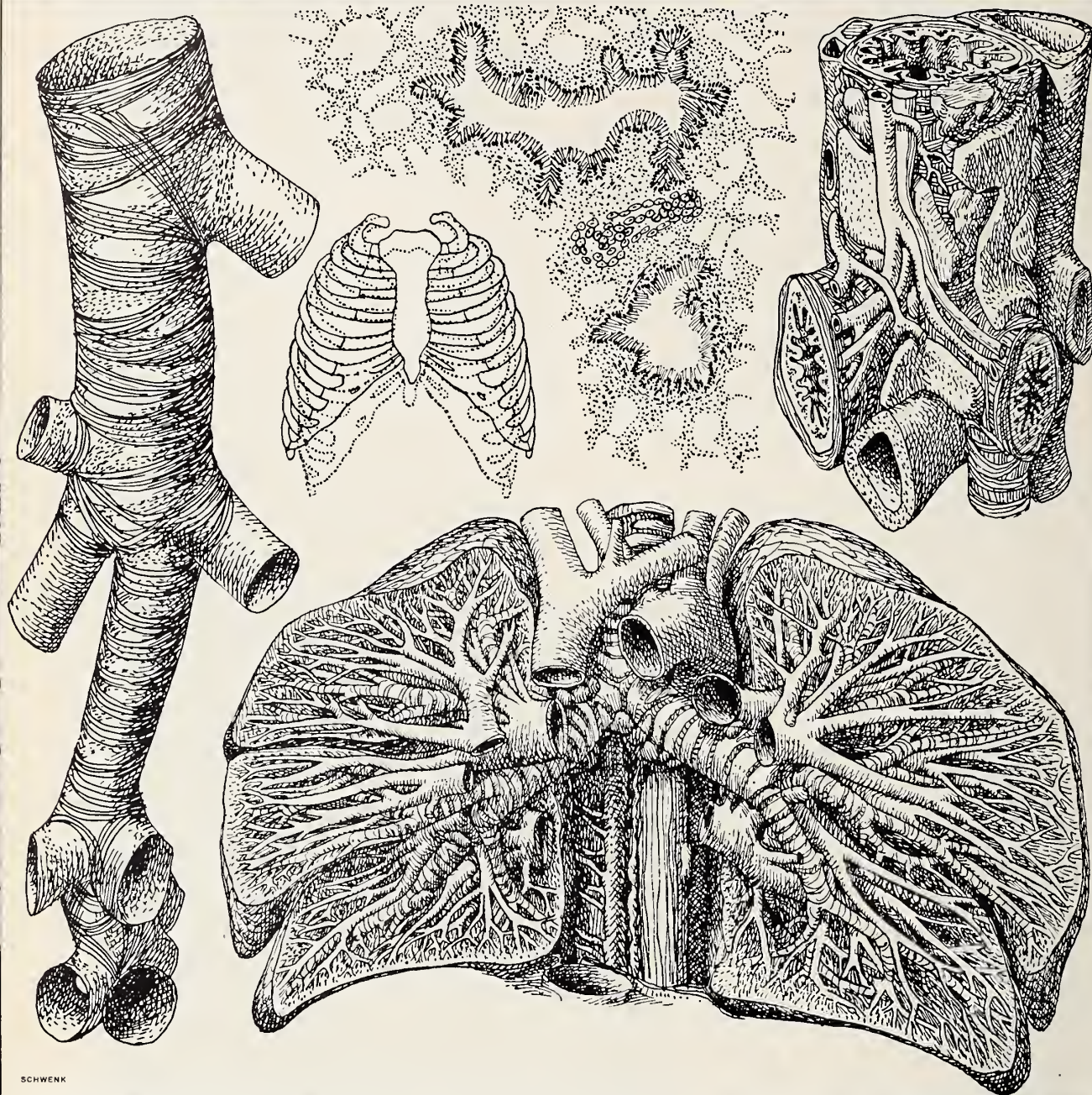
It was also pointed out that in almost all relevant reports phenacetin had been taken in combination with other drugs, such as aspirin and caffeine. Therefore, the conference was told, any assumed toxicity resulting from such a compound could involve a number of different factors and definitive experiments to separate these possibilities have not been reported.

Summing up the discussion, Dr. Gerald D. Dorman, New York City, the conference chairman, said a definite public health problem had not yet been demonstrated, that there was no assurance that phenacetin itself is at fault, but that there was every indication for further studies of the role of that drug as well as other compounds in the development of kidney disease.

The *Journal* editorial concluded that physicians and the public should be "alert to possible deleteri-

(Continued on Page 46)







# California M E D I C I N E

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## Nonobstructive Oliguria

### Differential Diagnosis

RICHARDS P. LYON, M.D., San Francisco

A 65-YEAR-OLD MAN with diabetes went into shock during an operation on the prostate gland. After the operation he was given generous amounts of dextrose in water parenterally before oliguria was discovered. Edema had appeared and the serum sodium value was 124 mEq per liter. A diagnosis of "acute tubular necrosis" (more commonly known as "lower nephron nephrosis") was made and a maintenance regimen was established. By the sixth postoperative day, the patient was comatose and in serious respiratory distress. His 24-hour urinary output remained at 200 cc and urinary specific gravity was constant at 1.010. At this time the urinary chloride was first measured and was found to be less than 5 mEq per liter. It was then recognized that so low a urinary chloride value was not compatible with "acute tubular necrosis," and the diagnosis was changed to "hypotonic overhydration." A 5 per cent salt solution given intravenously produced prompt diuresis and the patient recovered.

This case history demonstrates how the oliguria and uremia of a fluid electrolyte imbalance may mimic that of "acute tubular necrosis." In the former, prompt therapy with electrolytes and water is necessary; in the latter, a carefully managed regimen verging on dehydration is required if the

• A review is presented of ten years' experience with the differential diagnosis of oliguria, utilizing the standard tests of renal function with the addition of the phenolsulfonphthalein excretion and urinary chloride measurements. The histories of 60 patients seen in consultation because of 24-hour urinary volume of less than 400 ml were studied in order to clarify the value of these tests. Particular attention was given to the postoperative "dilution state," the oliguria of which tends to mimic that of "acute tubular necrosis."

In only 25 per cent of the 60 cases was "acute tubular necrosis" responsible for the oliguria. In the remaining 75 per cent of patients, oliguria was due either to the effects of simple dehydration without tubular damage, or to tubular dysfunction on a physiologic rather than an organic basis. Thus, three out of four patients with oliguria required aggressive and specific fluid-electrolyte therapy, often with the intensive use of potassium. One out of four required the opposite in therapy—controlled dehydration without added potassium and, on occasion, peritoneal or extracorporeal dialysis, in order to allow six to ten days for tubular repair.

patient is to survive. A history of shock, rising blood urea nitrogen level, and a small output of urine, proteinuria and a urinary specific gravity of 1.010, are often not diagnostic of the type of renal lesion present. The addition of two more tests, the measurement of phenolsulfonphthalein excretion and urinary chloride, may make the diagnosis clear.

From the Division of Urology, University of California School of Medicine, San Francisco 94122.

Presented before the Section on Internal Medicine at the 90th Annual Session of the California Medical Association, Los Angeles, April 29 to May 31, 1963.

Revised manuscript submitted January 21, 1963.



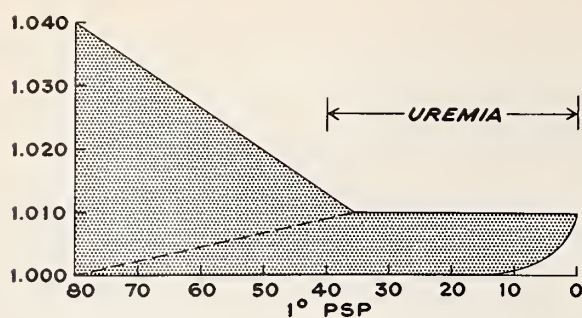


Chart 1.—Urinary concentration and dilution powers with respect to overall renal function as estimated by PSP excretion. Vertical column shows specific gravity. Dotted line indicates the usually accepted but incorrect concept of failure in dilution powers.

These tests are simple to perform and are available in all hospital laboratories.

The diagnostic usefulness of these tests of renal function was evaluated in 60 oliguric patients seen in consultation. Because a urinary volume of 400 cc is required to prevent progressive uremia in the presence of normal renal function, a patient has been considered to be oliguric if his urinary volume was less than this.

#### Clinical Tests

The blood urea nitrogen (BUN), nonprotein nitrogen (NPN) and serum creatinine values were elevated in all 60 cases, as would be expected in patients with oliguria. All three values tend to rise uniformly, with three exceptions: (1) When blood is absorbed in the bowel, the rise in the creatinine level lags behind the rise in nitrogen. (2) The reverse may occur after a severe crushing injury in the young patient who has "acute tubular necrosis." In this series, one such patient had a serum creatinine level of 10 mg per 100 ml and an NPN level of only 60 mg per 100 ml 48 hours after injury and shock. (3) A third exception may be seen in patients with urinary extravasation, whether the extravasation is intraperitoneal or extraperitoneal. For example, in one patient with a ruptured bladder and extraperitoneal urinary extravasation, the BUN level rose rapidly, suggesting renal failure, while the serum creatinine concentration remained normal, correctly indicating adequate renal function.

Moreover, proteinuria by itself is of little help in diagnosis, since it tends to be present whether the lesion is organic or physiologic. The absence of proteinuria suggests adequate renal function only when the urinary specific gravity is high. The latter test, therefore, is the informative one.

Urinary specific gravity was measured with the standard hydrometer and often with the T-S meter.\*

\*Refractometer manufactured by American Optical Company.

The latter requires only a single drop of urine for accurate measurement of urinary density. When such a refractometer is available in every hospital laboratory, the "quantity not sufficient" urine sample will happily become a thing of the past. Chart 1 graphically relates the random measurement of urinary specific gravity to renal function as estimated by PSP excretion. The ability of the kidney to excrete urine of high density fails progressively with damage, to a point where 1.010 is the highest density possible. From this point on, the value of measurement of urinary specific gravity as a reasonable estimate of remaining renal function is limited. In "acute tubular necrosis," a specific gravity of 1.010 is the rule. Similarly, in patients with a serious fluid-ion imbalance, fixation of urinary specific gravity at 1.010 may be the first indication of renal dysfunction and beginning renal damage. Correction of the fluid-ion imbalance usually results in a return of concentrating power in the previously normal kidney. A urinary specific gravity below 1.010 in the presence of severe dehydration should suggest urinary tract obstruction or long-standing obstructive and inflammatory renal disease.<sup>2</sup> Upper urinary tract obstruction should then be promptly ruled out by ureteral catheter studies.

The urinary specific gravity is useful and diagnostic only when it is 1.022 or higher. Exceptions to the rule exist. Severe glycosuria may alter the results of the test; and in a rare case, during the 48 hours following shock, the presence of either transudate or pre-shock urine in the bladder may cause a misleadingly high reading. Proteinuria, regardless of degree, has little effect on values recorded by the hydrometer. When the results of the urinary specific gravity test are questionable, the PSP and chloride tests should next be done to clarify the diagnosis.

The second essential test is PSP excretion. Exactly 1 ml of dye is injected intravenously and collections are made at 30 and 60 minutes. Chart 1 shows the gradually diminishing PSP excretion in advancing renal insufficiency, well beyond the point where specific gravity becomes fixed in the 1.006 to 1.010 range. This test gives us specific "demand" information on renal function to a point of renal insufficiency just short of "acute tubular necrosis." It is often stated that PSP excretion is greatly affected by urinary volume and that it is useless to run the test in the presence of oliguria. That such a criticism is not valid in the absence of urinary tract obstruction and stasis is demonstrated in this series by the case of a patient with postoperative oliguria who excreted 35 per cent PSP in 30 minutes in just 9 ml of urine. The renal dysfunction of "acute tubular necrosis" allows for "trace" excretion of PSP per

hour at the most. In no case where PSP excretion was 5 per cent or more in 60 minutes was "acute tubular necrosis" present, as evidenced by prompt recovery of renal function with fluid-ion therapy, or by postmortem examination. In the absence of obstruction and retention, a PSP excretion of 5 per cent or more per hour in an oliguric patient is indicative either of a chronic renal lesion with superimposed dehydration or a physiologic lesion quickly reversible with correct fluid-ion therapy.

**Urinary Chloride.** The renal tubule concentrates salt with respect to water in much the same over-all fashion as it concentrates urea. A curve of possible urine salt concentration with respect to renal function is similar to that seen with specific gravity.<sup>3</sup> Chart 2 shows that the normal kidney may excrete at least as much as 20 grams of salt per liter, or as little as a fraction of a gram per liter. As renal damage progresses, the kidney fails to handle excesses of salt, as well as deficits with respect to water. Thus, a patient with chronic renal insufficiency and failure in concentrating powers may be able to excrete only 100 mEq per liter (6 grams) of salt in the presence of salt excess. At the same time, reabsorption of salt is limited and this patient on a salt-free regimen may lose 15 mEq (1 gram) with each liter of urine, resulting in salt and water deficit and dehydration.

In "acute tubular necrosis," urinary chloride concentrations tend to remain fixed in the 30 to 40 mEq per liter range during the period of oliguria.<sup>3</sup> A urinary chloride\* of 20 mEq per liter or less indicates that a classic "acute tubular necrosis" is not present and that the patient may have a physiologic imbalance (such as salt deficit, cardiac failure, circulatory failure). Measurements that are *fixed* at a value between 40 and 100 mEq per liter during the oliguria following shock suggest the possibility of an incomplete lesion or a partial "acute tubular necrosis," and therapy is the same as in "acute tubular necrosis." This diagnosis is confirmed by a 1.010 fixed specific gravity and a "trace" excretion of PSP. When shock has not occurred, a variable urinary chloride in the range of 0 to 100 mEq per liter suggests a physiologic renal lesion which requires corrective fluid-electrolyte therapy, the type defined by body weight and aberrations in the serum electrolyte concentrations. Values of urinary chloride above 100 mEq indicate

\*In the presence of renal insufficiency, ammonia and like mechanisms that normally operate to allow selective reabsorption of sodium fail, and the chloride ion is excreted with sodium. Therefore, with renal insufficiency the urinary chloride may be routinely considered as a reasonable indicator of urinary salt. However, when a sodium excess is produced, for example when sodium lactate is given intravenously, sodium may be excreted in considerable excess of chloride despite renal failure, and the urinary chloride concentration is not a reliable indication of urinary sodium concentration. Similarly, with "acute tubular necrosis," other investigators<sup>5</sup> have noted a fixed urinary sodium concentration close to 60 mEq per liter, twice that found for the chloride ion in the present series.

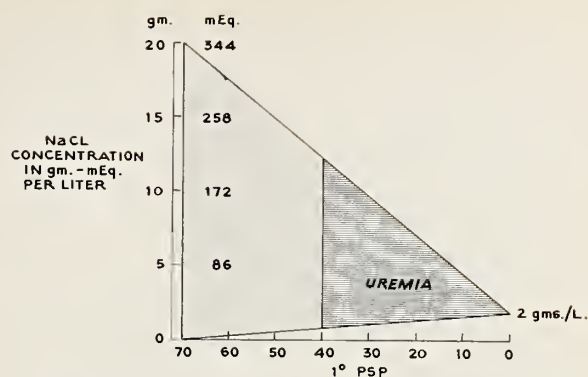


Chart 2.—Range of possible urinary concentrations with respect to renal function as estimated by PSP excretion.

the presence of a physiologic or, rarely, a chronic renal lesion rather than "acute tubular necrosis," whether or not shock has occurred. Therefore, this test may become crucial in defining the cause of oliguria. It is particularly valuable when urinary output is so small that the standard hydrometer cannot be used. Only 1 cc of urine is required for the Shales and Shales method, so well adapted by Scribner in his "bedside urinary chloride" test.<sup>4</sup>

As to the results of such tests done at the bedside, the measurement of urinary specific gravity provides the key information as long as a 1.022 value or more is recorded. In progressive tubular dysfunction with fluid-ion imbalance, chronic renal insufficiency and acute tubular necrosis, fixation near 1.010 tends to be the rule. PSP excretion, however, continues to provide important information well into advanced uremia until the excretion rate is less than 5 per cent in one hour. From this point, measurement of urinary chloride provides the significant information.

#### CASE EVALUATIONS

Table 1 lists the events leading to oliguria in 60 patients. Table 2 illustrates the frequency with which each of these three basic tests provided deciding data in the series. By classifying the cases in terms of the diagnostic values of the three tests under discussion, four groups are defined.

Group I represents the ten cases in which a urinary specific gravity of 1.022 or more indicated normal renal potential despite oliguria. PSP excretion, when measured, confirmed the specific gravity test as reliable in these cases. Dehydration was severe in all the patients and was usually secondary to massive fluid and electrolyte loss into the bowel, the peritoneal cavity or both. These patients were seriously ill as a result of such a surgical complication as peritonitis, rather than from the accompanying uremia. These cases suggest that when



TABLE 1.—Clinical Abnormalities Leading to Oliguria in 60 Cases

Abnormality	No. of Cases
Normotonic dehydration .....	10
Hypertonic dehydration .....	4
Hypotonic dehydration .....	2
Hypertonic overhydration .....	1
Hypotonic overhydration (dilution) .....	12
Alkalosis with dehydration .....	4
Acidosis (NH <sub>4</sub> Cl, diabetic) with dehydration .....	2
Primary potassium debt .....	2
Aortic, brachial, femoral artery surgery .....	6
Transurethral prostatectomy with shock and hemolysis .....	7
Crush injury .....	1
Renal emboli (subacute bacterial endocarditis) .....	1
Acute glomerulonephritis .....	2
Pyelonephritis with renal necrosis .....	1
Chronic pyelonephritis with dehydration .....	2
Ruptured bladder .....	2
Aortography (year 1950) .....	1
	—
	60

specific gravity control is still present in patients with oliguria, it is likely that a rapid shift of body water and electrolytes has recently occurred, and an abdominal catastrophe of surgical importance should be suspected. Characteristically, with loss of extra sodium and chloride into the body cavity, and consequent redistribution of water between the cell and extracellular space, a fall in serum sodium and chloride usually occurred.

**CASE 1 (Group I):** A 68-year-old woman was seen on the fourth postoperative day after subtotal gastrectomy. Her condition was poor. She had a distended abdomen and was hyperventilating. The 24-hour urinary volume was 300 cc. Consultation was requested. The diagnosis made by the referring physician was "acute kidney failure."

**Evaluation:** The urinary specific gravity of 1.024 with a 1 plus albumin indicated adequate renal function. Absence of history of shock and a urinary chloride level of 30 mEq per liter suggested some degree of salt deficiency. Because the urinary chloride was in the range expected with acute tubular necrosis, a PSP test was done. Excretion was 25 per cent in 30 minutes, confirming the presence of adequate renal function.

**Working Diagnosis:** Peritonitis with secondary total dehydration.

**Treatment:** Salt, potassium and water were given until the dehydration was corrected, but the patient refused operative treatment. She died four days later. Necropsy disclosed normal kidneys and peritonitis secondary to a leaking duodenal stump.

**CASE 2 (Group I):** A 54-year-old woman had been in coma for 48 hours. Her 24-hour urinary output was 400 cc. The diagnosis on referral was "acute renal failure with acidosis"; poisoning had been ruled out.

**Evaluation:** A urinary specific gravity of 1.030 ruled out the presence of renal failure. This was confirmed by urinary chloride of 165 mEq per liter, which was too high for "acute tubular necrosis." Serum sodium and chloride concentrations were elevated.

**Working Diagnosis:** Hypertonic dehydration secondary to water loss from hyperventilation; the latter probably due to a central nervous system lesion. The patient died. The diagnosis was confirmed at autopsy when normal kidneys and a basilar artery thrombosis were found.

Group II of Table 2 consists of 20 patients in whom the urinary specific gravity was fixed at 1.010 regardless of the state of hydration. In all the patients, PSP excretion was 5 per cent or more in one hour, which ruled out "acute tubular necrosis." Ninety per cent of these patients were oliguric secondary to a fluid-ion imbalance that was not of a simple dehydration type. Ten per cent of these patients had unsuspected chronic renal disease with a superimposed fluid-ion problem. The most common imbalance (occurring in 60 per cent of the cases) was that of "hypotonic-overhydration" or "dilution," usually the result of excessive use of salt-free solutions in the postoperative period. These imbalances were corrected parenterally with hypertonic salt and potassium and all the patients recovered. When chronic renal insufficiency was not present, renal function promptly improved as evidenced by PSP excretion tests.

**CASE 1 (Group II):** A 68-year-old man was seen in consultation six days after resection of the large bowel for carcinoma. From the day of operation, the patient became progressively weaker and disoriented; continuous abdominal distention required tube drainage. Ankle edema and oliguria developed (24-hour urinary volume of 300 ml) on the fifth day after operation.

Laboratory studies showed the following:

Body weight.....	147 lb (preoperative 145 lb.)
Serum BUN.....	40 mg per 100 ml
Serum sodium.....	130 mEq per liter
Serum chloride.....	74 mEq per liter
Serum CO <sub>2</sub> .....	18 mEq per liter
Serum potassium.....	5 mEq per liter
Urinary specific gravity.....	1.014 with 1+ albumin
PSP excretion.....	30 per cent in 2 hours†
Urinary chloride.....	47 mEq per liter

**Working Diagnosis:** "Dilutional state" with adequate renal function as demonstrated by PSP excretion.

**Treatment:** A 5 per cent salt solution was given intravenously despite an excess of body water and resulted in prompt diuresis and establishment of a normal serum electrolyte pattern within 36 hours.

†This was the decisive test.

TABLE 2.—Frequency With Which Each of Three Tests Provided Decisive Diagnostic Data in Present Series

	No. of Cases	Urinary Specific Gravity	PSP Excretion Per Hour	Urinary Chloride Concentration	Treatment
GROUP I					
Dehydration with secretion loss.		= 1.022			
Peritonitis, etc. ....	10	or higher	.....	.....	AS
GROUP II					FLUID
Fluid-ion imbalance or chronic renal insufficiency* .....	20	1.010	5 per cent or greater	.....	ELECTROLYTE
GROUP III					PROBLEM
Fluid-ion imbalance .....	16	1.010	0 to trace	Less than 20 or more than 100 mEq per liter; varying values between 20 and 100 mEq per liter	
GROUP IV					AS
Acute tubular necrosis.....	10	1.010	0 to trace	Between 30 and 40 mEq per liter	ACUTE
Partial tubular necrosis.....	4	1.010	0 to trace	Fixed at between 40 and 100 mEq per liter	TUBULAR NECROSIS

\* Acute glomerulonephritis, renal emboli, pyelonephritis with renal necrosis, and ruptured bladder also coincidentally in this group.

The patient quickly recovered. Body weight fell to 140 pounds as abdominal distention and edema disappeared.

CASE 2 (Group II): A 46-year-old man was seen in consultation ten days after an automobile accident in which he had fractured his right femur. A "reflex" ileus was decompressed by gastric tube for ten days and the patient was encouraged to take oral fluids freely. The real result was continuous gastric dialysis to the point of coma, dehydration, rising NPN and urinary output of 200 ml per 24 hours.

Laboratory studies showed the following:

Body weight.....	200 lb (normal 225 lb)
Serum chloride.....	79 mEq per liter
Serum CO <sub>2</sub> .....	35 mEq per liter
Serum sodium.....	136 mEq per liter
Serum potassium.....	4.8 mEq per liter
Serum NPN.....	76 mEq per liter
Urinary specific gravity.....	1.015 with 1+ albumin
PSP excretion.....	50 per cent in one-half hour†
Urinary chloride.....	2 mEq per liter (Urinary sodium 2 mEq per liter)

*Working Diagnosis:* Oliguria secondary to advanced dehydration with gastric fluid loss, alkalosis and cellular potassium deficiency. The patient had adequate renal function despite oliguria and uremia, as demonstrated by the PSP and chloride tests and despite a failing specific gravity mechanism.

*Treatment:* Total hydration with 0.45 per cent saline solution and added potassium as soon as urinary output reached 25 cc per hour. By the third day, the patient became oriented and recovered rapidly. Urinary specific gravity remained fixed at 1.016 for ten days, then began to reflect body hydration in a normal fashion. Body weight leveled off at 218 pounds, the final weight reflecting water losses as a result of starvation.

†This was the decisive test.

Group III of Table 2 is made up of 16 patients whose renal function had deteriorated further, to the point that urinary specific gravity was fixed at 1.010 and PSP excretion was zero to a trace in 60 minutes. However, in these cases the kidneys retained some ability to control chloride ion excretion as evidenced by a urinary chloride of 20 mEq or less per liter in the presence of a relative chloride deficit, or an excretion of 100 or more mEq per liter with chloride excess as manifested by serum hypertonicity or by definite variability of urinary chloride in the range of 20 to 100 mEq per liter. Therefore, "acute tubular necrosis" was assumed not to be present, and therapy was directed at correction of fluid-ion imbalances, often by the addition of much potassium, salt, and water.

CASE 1 (Group III): A 52-year-old man, eight days after bowel resection and 36 hours after a period of clinical shock, was seen in consultation for probable "lower nephron nephrosis," because of a 24-hour urinary volume of 300 ml and NPN of 110 mg per 100 ml.

Laboratory studies showed the following:

Body weight.....	189 lb (normal 212 lb)
Serum sodium.....	170 mEq per liter
Serum chloride.....	130 mEq per liter
Serum CO <sub>2</sub> .....	9 mEq per liter
Serum potassium.....	5.5 mEq per liter
Urinary specific gravity.....	1.010 with 2+ proteinuria
PSP excretion.....	trace in 1 hour in 10 ml
Urinary chloride.....	130 mEq per liter†

*Working Diagnosis:* Hypertonic dehydration with secondary renal insufficiency (not "acute tubular necrosis"); the urinary chloride of 130 mEq per liter in the presence of a high serum chloride demonstrated that the kidney had not lost its control of chloride (or salt) excretion.

†This was the decisive test.



*Treatment:* Five per cent dextrose in water was given intravenously until serum chloride had dropped to a normal 100 mEq per liter; the urinary chloride had then fallen to 50 mEq per liter. Hydration was completed with 5 per cent dextrose in 0.45 per cent saline solution intravenously. Potassium was added to the solutions when the urinary output reached 50 ml per hour. Body weight leveled off at 204 pounds by the third morning; the patient became lucid and recovery followed. PSP excretion was 12 per cent in one hour by the fourth day and was normal by the third week.

**CASE 2 (Group III):** A 38-year-old man was vomiting and had been having intermittent convulsions for an unknown length of time. The serum potassium was 1.5 mEq per liter, the serum sodium 160 mEq per liter, and the serum chloride 61 mEq per liter.

Because the patient was cyanotic secondary to hypoventilation, which was presumed to be secondary to severe alkalosis despite oliguria, 0.1 normal hydrochloric acid was given intravenously. The respiratory rate increased and oxygenation became adequate, but intravascular hemolysis occurred. When the patient was seen in consultation, urinary volume was 200 ml in 24 hours and the BUN was 100 mg per 100 ml. The presumptive diagnosis was "acute tubular necrosis," secondary to hemolysis and severe fluid-ion imbalance.

Results of laboratory studies were:

Urinary specific gravity....	1.010 with 3+ proteinuria and an amorphous sediment without casts
PSP excretion.....	trace in 1 hour
Urinary chloride.....	20 mEq per liter
Gastric secretion.....	pH 1.0; chloride 160 mEq per liter; sodium 30 mEq per liter

*Working Diagnosis:* Severe gastric secretion loss with alkalosis, dehydration and potassium debt, and secondary renal insufficiency short of acute renal tubular necrosis despite known intravascular hemolysis.

*Treatment:* After immediate potassium therapy (despite oliguria) and administration of 0.9 per cent ammonium chloride, and finally 0.45 per cent salt solution intravenously, the patient recovered. PSP excretion returned to normal within five days, indicating a rapid return of function and absence of "acute tubular necrosis." Later operation revealed carcinoma of the stomach, despite proved extreme gastric hyperacidity, and gastrectomy was accomplished.

*Comment:* Commonly applied indications for use of peritoneal dialysis or the artificial kidney are oliguria, a 1.010 specific gravity and progressive uremia. Thus, all the patients in Groups II and III,

a total of 40, could be considered suitable candidates for dialysis if these indications are used. Dialysis would very likely correct the various fluid-ion imbalances and relieve the uremia, and it then would appear that the dialysis was life-saving. In reality, correction of the fluid-ion imbalance by the oriented physician accomplishes the same end without the added risks consequent to use of the artificial kidney.

Group IV is primarily made up of ten patients with a urinary specific gravity of 1.010, trace PSP excretion per 60 minutes, and urinary chloride concentrations between 30 and 40 mEq per liter. All had experienced either clinical shock, intravascular hemolysis, crush injury, probable myohemoglobinemia (with embolectomy) or aortography. In these cases, the urinary chloride concentrations remained fixed in the narrow 30 to 40 mEq per liter range until diuresis began.\* These patients were classified as having "acute tubular necrosis" and were treated as such. All remained oliguric for six to 10 days, as expected with this syndrome, and if death occurred the diagnosis was confirmed at postmortem examination.

**CASE 1 (Group IV):** A 56-year-old man was seen in consultation on the fourth day following a routine aortogram. His urinary volume had amounted to no more than 250 ml per 24 hours following the diagnostic study. The NPN had risen to 130 mg per 100 ml and hypertension had developed.

Results of laboratory tests were as follows:

Serum sodium.....	124 mEq per liter
Serum chloride.....	86 mEq per liter
Serum CO <sub>2</sub> .....	15 mEq per liter
Serum potassium.....	5.4 mEq per liter
Urinary specific gravity....	1.010 with 2+ proteinuria and amorphous sediment
PSP excretion.....	a trace in 1 hour
Urinary chloride.....	35 mEq per liter†

*Working Diagnosis:* "Acute tubular necrosis."

*Treatment and Course:* Although shock had not occurred and some degree of dilution was present, the urinary findings were classic for "acute tubular necrosis" and the patient was treated as having that condition. A maintenance regimen<sup>1</sup> was instituted and diuresis began on the seventh day after the aortogram. At this time the urinary chlorides began to rise above 40 mEq per liter, although return of PSP excretion to normal was slow, taking in all six weeks. One year later, an intravenous pyelogram disclosed atrophy of the right kidney, hypertrophy of the left kidney and normal PSP excretion.

\*The shift in chloride concentration to below 30 mEq per liter or above 40 mEq per liter appears to be the earliest indication of return of renal function and may appear before any striking increase in urine output, change in urinary specific gravity or return to PSP excretion.

†This was the decisive test.

Four patients are listed in Group IV as having primary renal lesions suggestive of a "partial acute tubular necrosis." These patients differed from others in the group in that urinary chloride concentrations were higher—in the range of 45 to 100 mEq per liter—but similarly tended to remain fixed throughout the oliguric period. Diuresis occurred earlier, from the second to the sixth day, and also, was accompanied by a shift in urinary chloride concentration.

CASE 2 (Group IV): A 65-year-old man was seen in consultation 36 hours after surgical repair of a ruptured aortic aneurysm. He had been in clinical shock for 30 minutes. The postoperative 24-hour urinary output was 200 ml.

Laboratory studies showed the following:

Body weight.....	163 lb (preop. 161 lb)
Serum sodium.....	141 mEq per liter
Serum chloride.....	89 mEq per liter
Serum CO <sub>2</sub> .....	31 mEq per liter
Serum potassium.....	5.7 mEq per liter
Serum creatinine.....	5 mg per 100 ml
Urinary specific gravity.....	1.014 with 2+ proteinuria
PSP excretion.....	a trace in 1 hour
Urinary chloride.....	80 mEq per liter—fixed†

*Working Diagnosis:* Partial renal tubular necrosis, based on chloride measurements. A normal electrolyte panel in the serum ruled out hypotonicity.

*Treatment and Course:* The patient was given a 400 calorie daily intake, with intake of water regulated to allow loss of weight of 1 pound a day. The serum creatinine value rose to 6 mg per 100 ml on the fourth day, and PSP excretion increased to 5 per cent in one hour, with diuresis on the fifth day. By the eighth day, the serum creatinine had fallen to 2 mg per 100 ml and was accompanied by a PSP excretion of 30 per cent in one hour.

#### COMMENTS

Uremia of itself, although it implies renal damage, cannot be taken to mean that the kidney alone is responsible. Thus, oliguria accompanied by advancing uremia (but with retention of adequate tubular function as measured by high density of urine) suggests that a sudden shift of body water

†This was the decisive test.

has occurred into a third space. Peritonitis with loss of fluid to the peritoneal cavity and bowel was the most common cause of this kind of oliguria in this series, and surgical intervention and replacement therapy were both necessary. In contrast, the sudden appearance of advancing uremia with all renal mechanisms damaged to the point that urine density is fixed at about 1.010 indicates a primary renal lesion as the cause of uremia. Treatment is rarely surgical and for the most part is restricted to replacement therapy while the renal lesion is healing.

A useful clinical concept to keep in mind is that the three tubular mechanisms—specific gravity control, PSP excretion and urinary chloride concentrations—are damaged in this order by such phenomena as hypoxia and severe electrolyte and water derangements. With tubular repair, whether organic or physiologic, this order is reversed, specific gravity control being the last to return. A rare exception to this rule may occur with the dilution syndrome, for here PSP excretion may be normal while renal salt control appears to be damaged and resultant salt loss occurs despite an apparent need for salt by the body. Thus, the serum chloride, although low, may accompany a urinary chloride excretion in the range of 100 mEq per liter.

It is suggested that a fluid-ion imbalance, serious enough to cause fixation of urinary specific gravity at 1.010 and a trace PSP excretion, if allowed to continue, could result in a failure of urinary salt control and, perhaps, even in cellular death as with "acute tubular necrosis."

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# The Toxic Effects of Amphotericin B in Man

CHARLES W. HOLEMAN, JR., M.D., and HANS EINSTEIN, M.D., Bakersfield

UNTIL RECENTLY it has been customary to express little concern about the nephrotoxic effects of intravenous amphotericin B.<sup>3,11</sup> At present there is greater concern for the kidney when this drug is used in the treatment of deep mycotic infections; however, there is still lack of understanding as to the mechanisms by which renal damage occurs and the best techniques to minimize the damage.<sup>1,2,10</sup>

A preliminary report of our early observations was made in 1961.<sup>7</sup> Further observations and analysis of data have confirmed and clarified many of our findings. Hence we believe a more detailed report will be of value at this time.

These observations were made in 47 cases of disseminated coccidioidomycosis in which the patients were treated with intravenous amphotericin B for a minimum of four weeks and treatment was extended to three months or longer in 31 cases. All patients were treated six days each week. Forty-one adults received a dose of 1 mg per kilogram of body weight daily. Six children received a dose of 1.5 mg per kilogram of body weight daily for three months. The drug was given by infusion over a period of not less than three hours in a concentration of 10 mg per 100 ml of 5 per cent dextrose in water with 10 to 20 mg of heparin added.

Forty-one of the patients had received no previous treatment. Six of the adults had received repeated courses of therapy. Total dose of amphotericin B was not calculated in the six children because of

• Studies of 47 patients with intravenous amphotericin B revealed some impairment of renal function in all cases. Azotemia developed in 46 cases. Microscopic examination in eight cases showed damage to the distal renal tubule. Profound hypokalemia was recognized in two cases; and symptoms suggesting hypokalemia, which were generally ameliorated by potassium administration, were noted in most cases. It is postulated that the initial potassium loss is due to a "tubular leak" and that subsequent potassium depletion leads to further tubular damage.

Mild to severe anemia developed in all cases during therapy. Serial red cell indices, bone marrow examinations and red cell survival studies indicated that hemolysis, rather than bone marrow depression, was responsible.

The decision to treat, to modify therapy or to terminate treatment must be made on the basis of severity of disease, probability of progression, and renal status.

wide variation in body weight. Total dose, including previous treatment, in the adults was as follows:

4 to 14 grams of amphotericin B—6 cases.

2.5 to 3.9 grams of amphotericin B—29 cases.

Less than 2.5 grams of amphotericin B—6 cases.

## OBSERVATIONS

Azotemia developed in 46 of the 47 cases (Chart 1). The 15-minute phenolsulfonphthalein excretion test showed pronounced impairment after two to three months of treatment in all cases (Chart 2). With one exception the Fishberg concentration test showed significant alteration after two weeks of therapy and in all cases after two to three months

From the Coccidioidal Study Group, Kern County General Hospital, Bakersfield, California.

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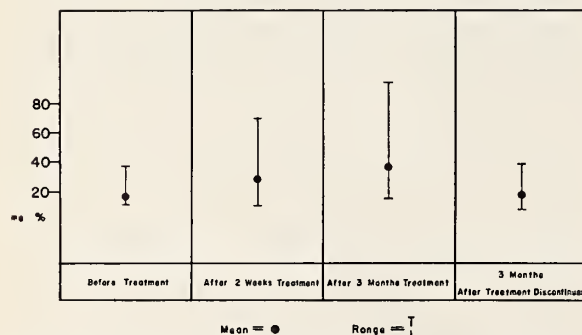


Chart 1.—Blood urea nitrogen in 47 patients, before, during and after treatment with amphotericin B.

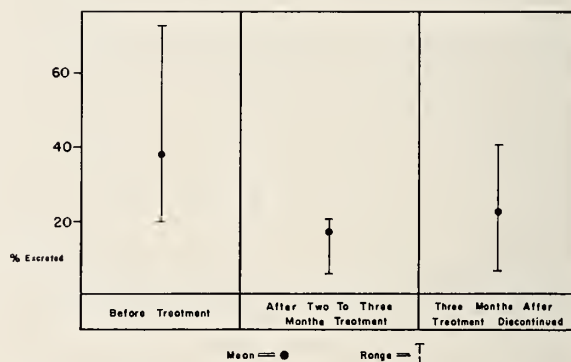


Chart 2.—Phenolsulfonphthalein excretion in 47 patients before, during and after treatment with amphotericin B.

(Chart 3). Three months after treatment was terminated the blood urea nitrogen and the Fishberg concentration test had returned to near pre-treatment values (Charts 1 and 3). However, the 15-minute phenolsulfonphthalein excretion test still revealed significant decrease of renal function (Chart 2).

Six patients died during treatment—none of them in renal failure—and necropsy was carried out. Two of these patients received about 3.5 grams of amphotericin B each; the others received 4.8, 8.8, 12 and 13.3 grams. Kidney biopsy was performed after two months of therapy in two additional cases. Each of these patients had received 2 to 2.5 grams of amphotericin B. No consistent pattern of histopathological change could be demonstrated in the glomerulus. In all eight cases there was necrosis of the epithelium of the distal renal tubule (Figures 1, 2 and 3) and calcinosis (Figure 1) was seen in two cases. Vacuolation of the tubular cells (Figure 3) was a prominent feature.

Ninety per cent of the patients complained of generalized muscular cramps and some weakness. It is also noteworthy that almost all the patients under treatment had an insatiable appetite for fruits and fruit juices.

Profound hypokalemia developed in the two cases reported below. Since then, serum potassium determinations have been done routinely in all patients during therapy and supplemental potassium has been administered. Hence no further data as to the incidence of hypokalemia is available in this series.

**CASE 1.** A 35-year-old white woman who ate an adequate diet, but who shunned fruits, complained of severe muscular weakness after receiving a total of 2.0 gm of intravenous amphotericin B in a two-month period. The serum potassium was found to be 2.2 milliequivalents per liter. She was much improved after vigorous replacement of potassium by mouth was begun and felt entirely well within 48 hours. At no time did this patient receive any corticosteroids.

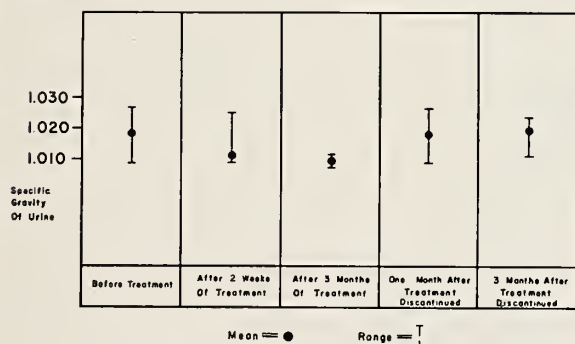


Chart 3.—Fishberg Concentration Test in 47 patients before, during and after treatment with amphotericin B showing loss of concentrating power during therapy.

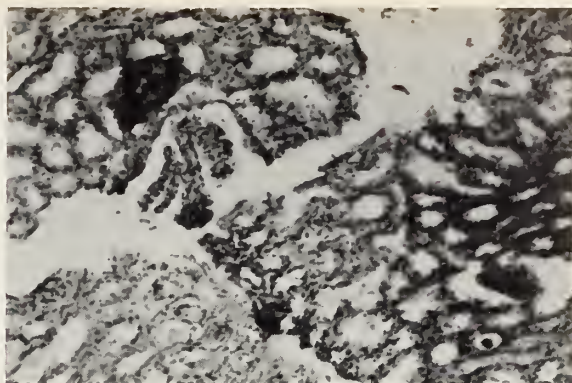


Figure 1.—Photomicrograph ( $\times 100$ ) of kidney after amphotericin B therapy. Note extensive tubular damage and calcinosis. H & E stain.

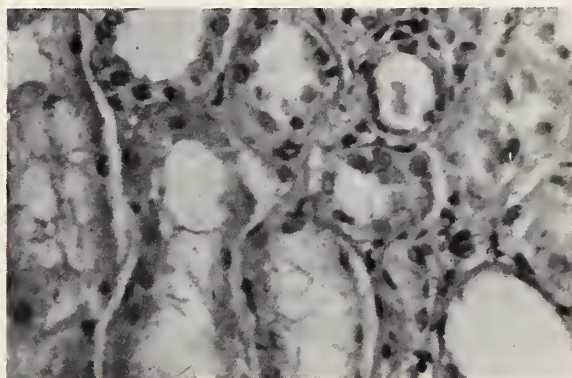


Figure 2.—Photomicrograph ( $\times 400$ ) of kidney, showing more clearly the necrosis of tubular epithelial cells. H & E stain.

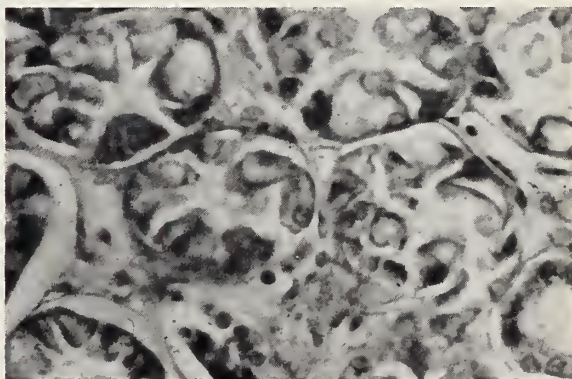


Figure 3.—Photomicrograph ( $\times 400$ ) of kidney after amphotericin B therapy. Note vacuolation of tubular epithelium. H & E stain.

**CASE 2.** A five-year old Mexican boy became very lethargic and appeared moribund after receiving amphotericin B intravenously for 20 days. At no time had he received any corticosteroids. The serum potassium was 2.4 milliequivalents per liter. He responded rapidly to vigorous intravenous potassium replacement.



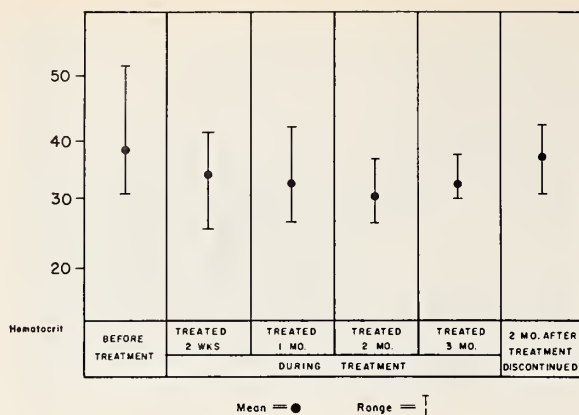


Chart 4.—Hematocrit (per cent) in 47 patients, before, during and after treatment with amphotericin B.

Anemia developed in all cases (Chart 4). Bone marrow examinations were performed before, during and after therapy in 20 cases. There was no significant change except hyperplasia during or after treatment. Red cell indices before, during and after treatment revealed no significant change. Red cell survival time was studied in six cases and there was a significant decrease during the second week of therapy (Chart 5).

Like many other observers,<sup>8,11</sup> we had much difficulty with nausea, vomiting, chills and fever. These symptoms were ameliorated, but not completely controlled, by the use of diphenhydramine and prochlorperazine intramuscularly and salicylates by mouth. Thrombophlebitis, a well known problem,<sup>8,11</sup> was minimized by the use of a fine needle in a peripheral vein as recommended by Winn.<sup>11</sup> It was further reduced when no drugs except heparin were added to the intravenous amphotericin solution.

#### COMMENTS

The anemia observed during treatment with amphotericin B appears to be hemolytic rather than due to bone marrow depression.

In this series some impairment of renal function developed in all patients under treatment, including six who were treated for only four to eight weeks, receiving a total dose of 1 to 2 grams of amphotericin B each. These six patients, as well as those treated for more prolonged periods, had significant impairment of 15-minute phenolsulfonphthalein excretion three months after treatment was terminated. Histopathological studies in eight cases revealed damage to the distal renal tubule. Two of the patients with such damage had received less than 3 grams and three had received less than 5 grams of amphotericin B. In the hospital at which the present study was carried out, one patient died with

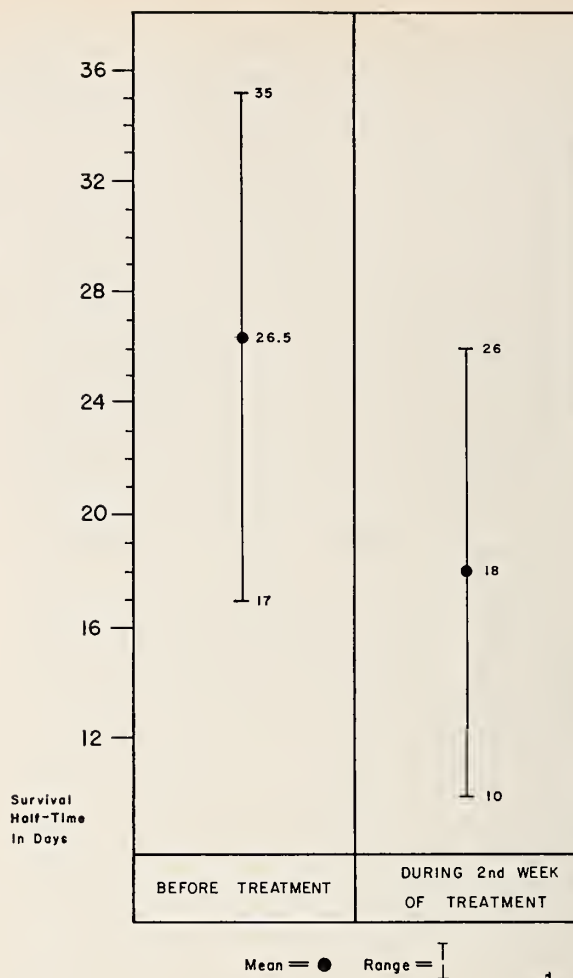


Chart 5.—Red cell survival studies using  $\text{Cr}^{51}$  labeled red cells in six patients before and during treatment with amphotericin B.

renal failure while under treatment with amphotericin B, but was excluded from the series because autopsy was not done. We assume that his death was due to amphotericin B, but in the absence of pathological studies we can not prove the absence of other renal disease.

Profound hypokalemia occurred in two cases and has since been noted in other cases not included here. It should be emphasized that the serum potassium is not a good index of total body potassium, and that severe potassium depletion is present when the serum level falls below normal limits.<sup>5</sup> Presumably potassium loss is due to a renal tubular "leak."<sup>4</sup> Sections of pathological specimens of the kidney revealed vacuolation of tubular cells, suggesting that the severity of tubular damage is increased by potassium depletion.<sup>9</sup>

We think the following factors probably influence the severity of renal damage in any individual case:

1. Individual differences in susceptibility.
2. Pre-existing renal disease or lower urinary tract obstruction.
3. Daily dose of amphotericin B.
4. Lapse of time between doses.
5. Total dose administered.
6. Potassium depletion.

On the basis of these assumptions we recommend:

1. Careful selection of patients for therapy, balancing the risk of the disease against the risk of the drug in each case.

2. Early treatment of severe coccidioidal infections, since presumably larger amounts of amphotericin B will be required if the disease is permitted to progress. (Generally we use 1 mg per kilogram of body weight every other day, the amount depending on the clinical status of the patient.)

3. The administration of small doses once every one to two weeks where prolonged suppressive therapy is required, as recommended in an earlier article.<sup>6</sup>

4. More extensive use of local rather than systemic treatment in localized lesions. (Irrigation of chronic lesions has produced satisfactory results in our hands, provided provision is made for washing "through and through" the lesion rather than simply injecting the drug.)

5. Administration of supplemental potassium during therapy with frequent serum potassium determinations and serial electrocardiograms.

Since amphotericin B is the only drug that has been shown to be effective in the treatment of coccidioidomycosis<sup>6</sup> it should be administered in severe coccidioidal infections despite its nephrotoxicity. Until such time as a more effective and less toxic agent is available, further studies clarifying the

mechanism of kidney damage and means of averting this damage are urgently needed.

ADDENDUM: Recent studies done by other investigators of patients treated for long terms with amphotericin B therapy suggest that there is consistent glomerular damage.

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# Tuning Fork Fremitus

## A New Method for Evaluation of the Chest

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A DISADVANTAGE OF AUSCULTATION or palpation of the chest for variations in fremitus while the patient repeatedly says "ninety-nine" is that the tonal quality of the voice is inconstant.

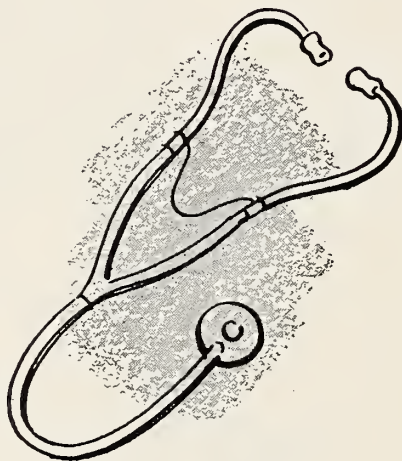
This factor is overcome by a method that I have used for the past three years: A 256 cycles per second tuning fork is struck vigorously with a plexor, then the stem of the fork is pressed against the body of the sternum with one hand while the other is used to hold the stethoscope for auscultation of the apices and the lateral and posterior walls of the chest. A standardized musical tone is trans-

mitted through the chest with considerably greater fidelity than the patient's vocal sounds, and in my experience the observations made by this method have correlated well with subsequent radiological examinations.

It has been particularly useful in diagnosis as well as in following the progress of re-inflation of the lung in pneumothorax. Once one has gained experience with this method—"sound adapted" one's ears—he can readily discern areas of consolidation, intrathoracic masses, fluid levels, emphysema, and the like.

Submitted January 21, 1963.

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# Homosexual Transmission of Infectious Syphilis

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BECAUSE THE SUBJECT is usually not discussed in medical journals other than those of psychiatry and psychoanalysis, the profession at large is often ignorant of the incidence of homosexuality and its relationship to venereal disease.

Brown<sup>2</sup> recently said that since 1957 infectious syphilis has been increasing at an alarming rate in all races, sexes, ages, social groups and geographical areas. Table 1 shows the increase in the incidence of syphilis in five metropolitan West coast areas between 1955 and 1959. It is the opinion of Tarr and Lugar,<sup>9</sup> that the increase in the Los Angeles area is due to homosexual transmission. Others also have expressed belief that the increase in infectious syphilis is ascribable to homosexual contact.<sup>11</sup> If 37 per cent of the male population have some homosexual experience between adolescence and old age,<sup>5</sup> these facts may be readily explained.

In Tarr and Lugar's<sup>9</sup> private series of 194 patients diagnosed as having infectious syphilis, 170 (87.6 per cent) were males. Eleven were unable to identify a contact; but of 159 supplying adequate information, 89 (56 per cent) had male contacts only and 21 (13 per cent) had both male and female contacts. The 170 men patients had had 551 male contacts. In the investigation of this latter group, 93 were found to have syphilis. Stewart<sup>8</sup> told of a recent case of secondary syphilis in a passive homosexual. Treating the disease in this case offered no particular problem, but the epidemiological problem we face today in dealing with infectious syphilis was indicated in the fact that the patient had 14 current sexual contacts.

At the Division of Venereal Disease Control for the Province of British Columbia, there were 24 cases of infectious syphilis in 1961. Fifteen of the patients were homosexuals. A history of 54 contacts was elicited from this series and 32 of the contacts were located. Nine of them had early syphilis. Two

• Homosexuality is more prevalent in our society than many suspect.

The incidence of infectious syphilis is increasing and the homosexual is playing an increasing role in its epidemiology.

Fifteen per cent to 70 per cent of homosexuals practice analism.

The diagnosis of venereal disease should always be kept in mind when dealing with ano-rectal problems.

had been treated for syphilis on a previous occasion. From 1957 to 1961, inclusive, there were 139 cases of syphilis at the Division of Venereal Disease Control, and in 130 of them the disease was transmitted by a homosexual. Not until 1961, the last year of the period, did cases in females begin to appear. It is assumed that since most homosexuals are gainfully employed, the data of private physicians were of a similar cast.

These statistics should make private physicians more aware of syphilis when considering any lesion about the mouth or anus. Although some investigators have reported the incidence of analism to be 15 per cent to 20 per cent among homosexual men,<sup>1,12</sup> it was found to be 70 per cent among 650 who were interviewed at the Division of Venereal Disease Control for B. C.<sup>7</sup>

Lest the physician's diagnostic suspicion be led astray when he is confronted with lesions about the anus, it should be emphasized that not all homosexuals have effeminate mannerisms. On the contrary—a homosexual may be of the most masculine demeanor and may even marry to supply the guise of conformity.

A factor in the transmission of syphilis is promiscuity, which Trice<sup>10</sup> noted is far greater in homosexual than in heterosexual men.

Two recent cases observed in private proctologic practice in a period of three months are worthy of note.

Submitted October 15, 1962.

TABLE 1.—Number of Cases of Primary and Secondary Syphilis by Year in Five West Coast Metropolitan Areas (1955-1959)

City	1955	1956	1957	1958	1959	Per Cent Change 1955-59
Los Angeles City.....	70	58	113	223	274	+291.4
San Francisco.....	45	89	124	144	311	+591.4
Portland.....	26	11	10	6	9	-65.4
Seattle.....	15	18	13	14	36	+140.0
Los Angeles County excluding Los Angeles City.....	27	39	33	51	57	+111.1



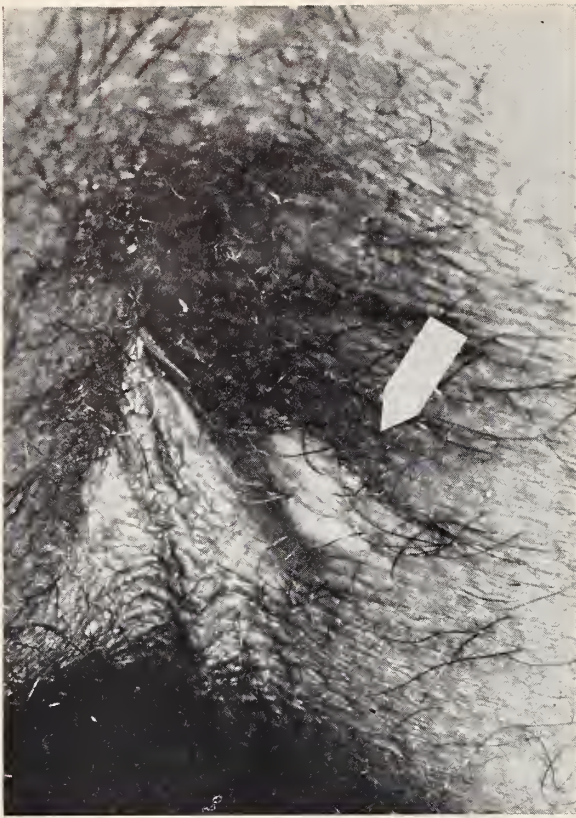


Figure 1.—(Case 1) Chancre on right anterior phase of anus, after five days of penicillin therapy. It appeared pearly white at this stage.

CASE 1. A 35-year-old single white clerk had been treated previously by the author for venereal warts. A culture of material swabbed from the rectum was negative for gonococci. The patient returned later with complaint of a "sore" on the anus which was aggravated by underclothing. Upon examination a necrotic ulcer 1 cm in diameter was noted at the anal verge in the left phase (Figure 1). It had a grey base and a pink areola. It was not similar to fissure, to a malignant lesion or to the excoriation sometimes seen in acute pruritus ani. A dark field examination was positive for syphilis, as was a serologic test of the blood. The patient admitted being a passive homosexual and further questioning elicited that he was very promiscuous.

CASE 2. A 17-year-old Indian boy complained of "a sore" near the anus. A small grey ulcer with pink areola was present on the right anal verge (Figure 2). Dark field examination and a serologic test of the blood were positive for syphilis. A culture of material from the anus was negative for gonococci. The boy gave a history of having had sexual relations with a well-dressed man who had picked him up in a late model car and paid him for his services.



Figure 2.—(Case 2) Primary chancre before treatment



Figure 3.—An initial lesion on a hemorrhoid, which could be mistaken for a chronic fissure.

Three months later he was admitted to Oakalla Prison, where he was found to be reinfected with syphilis.

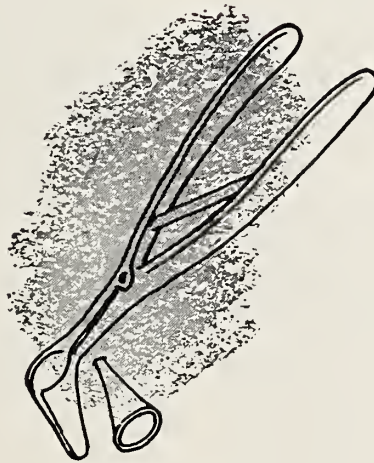
Jackman,<sup>3</sup> noting that syphilis of the rectum and anus is seldom reported clinically, expressed belief

that the infrequency is due to: (1) Self-treatment by patients who believe their problems to be hemorrhoids. (2) Failure of the physician to consider syphilis as a diagnosis along with other rectal conditions. (3) The patient's withholding of information for fear of being discovered as a sex deviate. (4) Failure of the physician to consider the anus and rectum as a primary site when confronted with a serologic reaction positive for syphilis. The lesions in the two cases herein reported took the form of small ulcers, but chancres located as they are near the anus, may become so modified as to resemble dermatitis or a chronic fissure.<sup>4</sup> A hard chancre on a hemorrhoid, such as was reported by Porter,<sup>6</sup> could be mistaken for a chronic fissure (Figure 3). When confronted with any suspicious lesions about the anorectum, I feel a dark field and blood serologic test for syphilis should be included in any diagnostic tests.

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# The Mistreated Child

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WHEN GIVING PRIMARY TREATMENT to a child who has been injured by parental battery or simply by neglect, the attending physician and the medical profession are also confronted with questions as to how to deal with the medical and social aspects of this not uncommon problem.

During a single year, at least a dozen children were seen at the Children's Hospital of the East Bay with maladies which appeared to be caused by the parents. In each case, the physicians faced with clear signs of parental neglect or abuse were reluctant to admit their impressions, hesitant to confront the parents with the evidence, and unsure of where to turn for help to prevent further mistreatment of the patient. It is our purpose to review some of these cases, describe what actually was done, and outline an approach which might result in better follow-up of cases that occur in the future.

CASE 1. The patient, a girl two months old, was admitted with a swelling on the back of the head and neck, and a deformed chest. A "setting sun" sign had been noted for a month preceding admission, although her head size was within normal limits (40 cm). On admission she was small and thin, with an asymmetrical head, white sclerae and swellings on the lateral margins of the ribs. She was limp and irritable and had poor control of head movements. By x-ray she was found to have two skull fractures, fractures of almost all ribs, with callus formation, and a chip fracture of one tibia, but otherwise normal long bones. Although the radiologist mentioned traumatic fracture, his primary diagnosis was probable metabolic bone disease, including osteogenesis imperfecta and hypophosphatasia. With repeated subdural taps, the condition of the patient gradually improved.

Her parents were in the early twenties and had three other children, one of whom had been diagnosed elsewhere as having osteogenesis imperfecta after having numerous fractures of the long bones. He, too, had white sclerae.

When the diagnosis of severe trauma was strongly suspected, the social worker notified a deputy of the juvenile probation department, and the family

• "The battered child" has recently attracted the attention of physicians and social workers, but despite the fact that inflicted trauma produces characteristic x-ray changes, physicians are often reluctant to admit this cause. The neglected child may be more difficult to diagnose and is probably more common. The most typical example is the infant who is admitted to the hospital for "failure to thrive," yet gains weight rapidly while away from his parents.

The parents of both types of children are likely to be immature and inadequate, but much more study is required before the factors common to these parents are known, to say nothing of the means required for prevention and treatment.

When the physician suspects that the parent is causing the difficulties manifested by the child, he should seek the help of a social worker in clarifying the situation and in contacting the appropriate social or legal agency. A greater awareness of the problems of these children should result in more rapid recognition of the condition, the establishment of well-defined methods of handling such cases, and ultimately better legislation to safeguard the child's rights to a safe and healthy childhood.

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was reported to the juvenile division of the sheriff's department for investigation. The mother admitted to the sheriff that she had abused the children. The other siblings were placed with relatives, as was the patient when she was discharged from the hospital.

Criminal proceedings were begun against the mother upon complaint from the sheriff. The hospital resident physician and the radiologist were called to testify at the trial. When the mother pleaded guilty, psychiatric care rather than imprisonment was recommended.

The patient might have been spared the trauma and potential brain damage if the physicians who cared for the older sibling had intensively investigated the possibility that his lesions might have resulted from the most common cause of multiple fractures in childhood—inflicted trauma.

CASE 2. A quite different problem was presented by a 16-year-old girl who was in good health. As she was recovering from anesthesia after tonsillectomy, the nurse heard her cry out "Daddy, don't

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hit me!" and similar pleas. A social worker who was notified learned that the girl's mother had been so concerned with her own problems regarding a recent separation from her husband that she had ignored her daughter's difficulties. The social worker referred both mother and daughter to a mental hygiene clinic for psychiatric help, and at latest report they seemed to be making good progress.

CASE 3. An 8-year-old boy had repeated episodes of abdominal pain for which no organic cause was found after detailed examinations. Investigation of the family revealed an alcoholic father and severe financial problems, which appeared to worry the boy. Since the mother realized the problem was emotional, she asked the social worker for help, who referred the family to the Family Service Association.

The first two patients had suffered physical abuse at the hands of their parents. In the third case, the abuse was evidently emotional rather than physical. At present Child Protective Services may initiate action only when physical abuse is apparent; when the mistreatment is emotional, the possibility of help depends on the parents' willingness to cooperate.

In this presentation we are especially concerned with the negative side of child mistreatment, that of neglect. An extreme example reported in the local newspapers recently<sup>8</sup> was that of a 19-month-old girl who was found by the police starving (weighing only 13 lb) and filthy, alone in an apartment, her mother dead, and her father in a bar across the street. The child was treated at San Francisco General County Hospital, and when she was in fair health was sent to relatives in another state. The father, meanwhile, faced criminal charges for child neglect. Less severe cases are not infrequently seen even in a private children's hospital, and are undoubtedly much more common in county hospitals.

CASE 4. A thin, lethargic baby was admitted at 4 months of age, brought a considerable distance by her parents, who were concerned that she was not progressing well. She had weighed 6 lb 3½ oz at birth and 8 lb 5½ oz at two months of age, but weighed only 8 lb 3 oz on admission. Physical examination and laboratory data gave no explanation of her poor weight gain. In the hospital she ate well and gained 19 oz in two weeks. Relatives mentioned to the hospital personnel that the mother had spent very little time with the baby, propped her for feedings, and ignored her because she seldom cried. The physician assigned to the patient spent considerable time with the parents, as did the social worker. Before discharge, they notified

both the local Child Protective Services and the public health nurses in the area. Follow-up was also arranged with a local pediatrician. When the mother wrote to the physician and social worker three months after discharge, she reported marked progress in motor development as well as a gain of 5 pounds from the weight at the time of admission to hospital.

It was the impression of the hospital staff who dealt with this mother that she had ignored the baby because she herself was extremely immature, was busy with the two other children and was not capable of recognizing the baby's needs, since the baby did not express hunger by crying. With supervision and support from a pediatrician, she appeared to be giving this baby adequate care.

CASE 5. The patient was referred by another physician at the age of four months. He had weighed 8 lb 6 oz at birth and 12 lb 1 oz at three months, but on admission was extremely emaciated and weighed only 10 lb 6 oz. He had been breast fed 10 to 15 minutes three times a day and given some solid foods. Although she had two other children, the mother had thought that this intake was adequate because he slept through the night and never cried. When she was told to give him homogenized milk, he eagerly drank 6 oz every 2 hours. He was given solids gradually in addition to the milk intake, which stabilized at 8 oz 5 times a day. One month later he weighed 11 lb 13 oz, and at the age of 7 months he was described as looking healthy and had reached the third percentile for both height and weight (14 lb 6 oz). This patient and his circumstances were managed merely by the physicians, without assistance from any social agency.

CASE 6. A boy two and a half years of age had been taken to a variety of physicians by the mother until one of them referred him because of poor appetite for two weeks and a skin rash. On admission he weighed only 16 lb 2 oz and was extremely dehydrated, requiring intravenous fluids. One week later he weighed 21 lb ½ oz. He was one of twins and had an older sibling, all from the mother's first marriage. At the time of admission the mother was pregnant by her second husband. The mother was not at all concerned about the boy's condition and told the social worker that she thought he should be placed in an institution for retarded children (he walked at two years and did not talk). The private physician was reluctant to become involved in the case. Disposition was therefore arranged largely by the resident and social worker. Before discharge, the case was referred to the Association for Retarded Children, and frequent follow-up visits by the public



health nurse were arranged. The hospital personnel realized that these measures were merely palliative, to safeguard the child. Probably only extensive psychotherapy could hope to relieve the mother's emotional disturbances.

CASE 7. The patient, a girl baby, was born with the Pierre-Robin Syndrome (cleft palate, small mandible, and a tongue which tended to fall back, occluding the airway). Her mother, an unmarried, disturbed 16-year-old, had decided to give the baby up for adoption, but since the baby was not adoptable, the mother insisted on keeping her. Counseling by workers from the adoption agency, the health department and the welfare department was to no avail. At the age of six weeks the baby had gained no weight, was admitted for surgical tying of the tongue, and during her month in the hospital presented feeding problems. Only when the mother repeatedly missed medical follow-up appointments could action be taken. The social worker in the foster home placements division of the welfare department finally brought the case to the attention of the juvenile court, and through the juvenile probation department placement in a foster home was effected.

Despite the mother's obvious inadequacy, much delay occurred before proper care was arranged for the baby. The multiplicity of agencies involved contributed to the delay, but the main factor was the necessity of establishing legally acceptable proof of the mother's inadequacy.

#### DISCUSSION

The battered child syndrome—so labeled by Kempe and coworkers<sup>6</sup>—usually is not diagnosed until after considerable delay, even though the x-ray findings may be characteristic.<sup>1,9</sup> A young child, usually under three years of age, with multiple fractures that have occurred at varying ages, and especially with subdural hematomas, should be suspected of having been abused unless very definite evidence of another cause is presented. Osteogenesis imperfecta and hypophosphatasia sound erudite and are unlikely to bring the physician into medico-legal hot water, but only a correct diagnosis of abuse, accompanied by appropriate safeguards for the child, can prevent a recurrence of maltreatment.

The less dramatic case of the neglected child, whose condition rapidly improves with normal feeding in the hospital and for whom many laboratory tests fail to show a cause for poor weight gain, should also not be overlooked. The neglected infant of today may be the battered child of tomorrow, and the chronically starved, ignored child is unlikely to grow into a well-balanced, useful citizen.

The physician, who is often a parent himself,

tends to identify with the parents of his patients.<sup>5</sup> When he suspects that the parent is responsible for the child's poor condition, he feels a repugnance and is eager to remove himself from the picture. The fear of medico-legal involvements, the threat of time-consuming investigation and court appearances, and especially the lack of knowledge about what should be done add to his inadequacy in helping the child.

When the physician in his attempts to resolve discrepancies between the child's condition and the parent's history, is suspicious of mistreatment he should turn without delay to the social worker for clarification. Her interviews with the parents are intended to give a better understanding of the family situation and the personalities of the individuals involved.<sup>2</sup> She is very careful to avoid "pointing an accusing finger" and arousing antagonism. Although cases of abuse have occurred in families with all types of social, economic and educational backgrounds, they are most prevalent with immature parents who are inadequate to cope with their responsibilities and have a tendency to act out their aggressions. These parents may be more difficult to recognize than those who are overtly psychotic or asocial. Other investigators of this problem repeatedly comment on the need to study the family in much more detail than has been done to date, in order to understand more of the factors which contribute to child abuse.<sup>5,6,9</sup>

When the social worker's report provides further information corroborating the physician's suspicions that the child's problems are the result of parental abuse or neglect, he may, in mild cases, merely discuss the situation with them, give them support, and arrange to follow the child carefully. In the more usual instance, he will have to turn to one of the community agencies for help, and often does not know where to go. Trying one department after another and being repeatedly referred to someone else is a frustrating experience which may make any but the most keenly interested physician decide against any further participation. Fortunately, many hospitals have medical social workers who are familiar with the various local agencies, can make the appropriate contacts for the physician and can coordinate the activities of the hospital personnel with those of the officials in the case.

The problem of the mistreated child is legally two-sided. On the one hand is the civil aspect of safeguarding the child; on the other, the criminal aspect of punishing the wrongdoers. Few physicians are aware that the two are not necessarily interdependent, and that the child's problems may be managed without any criminal proceedings against the parents.

Civil proceedings concern safeguarding the child,

and involve the juvenile court and the juvenile probation department. These agencies may take the child out of his home and place him in a foster home, or they may supervise him while he remains with his parents. The knowledge that the authorities are watching and advising may prevent further problems. Since the law is based on the idea of preservation of the family, and since usually there are not enough good foster homes, the court and its officers will do all they can to keep the child in the home, while providing supervision and arranging therapy as required. In some cases, however, additional mistreatment has occurred, with tragic consequences. In the experience of Los Angeles Children's Hospital, few parents can be relied on to refrain from further attacks on the children; hence more and more of the patients of this kind are being removed from the home.

Under the law, the parent has the right to custody of the child, and is entitled to his services, earnings and property.<sup>4</sup> In exchange he has the obligation to support the child, feed and clothe him, provide him with medical care and education, and refrain from abusing him or exposing him to unsafe situations. The state will try whenever possible to encourage the parent to fulfill these obligations. Only when there is no parent or he is manifestly incompetent does the state step in *in loco parentis*. For example, when parents refuse to consent to an operation which physicians deem essential for the survival of the child, the court, acting *in loco parentis*, may give the consent by temporarily making the child a ward of the court. Whenever possible, cases of neglected or abused children are handled by the previously described civil means.

#### The District Attorney's Role

In some cases the mistreatment is so flagrant that criminal proceedings are brought. At this point the district attorney's office is consulted. The district attorney's responsibility is to prosecute violators of state laws; he does not have the time or the personnel to investigate all suspicious situations. In the case of an abused child, the district attorney is under great handicaps in preparing his story, since the child is often too young or too frightened to communicate, the mistreatment is done in secret, the other parent will not testify against his spouse, and the evidence is entirely circumstantial. He, therefore, relies to a considerable degree on the physician's description of the patient and his recorded medical history.

The goal of the district attorney, like that of the others concerned in the situation, is to prevent recurrence of the abuse, rehabilitate both the child and the parent and only secondarily to punish the

guilty party. He may not wish to take the case to court, particularly if he feels that his evidence is not sufficiently convincing. In some situations, bringing the parents to his office, relating the charges and the available evidence, and warning them of the possible penalty in case further evidence accumulates, may provide enough of a deterrent.

Further supervision is required, however, by the sheriff or a social worker, a public health nurse or the family physician. At present these various persons rarely work together or communicate with each other, so that despite uniformity of the ultimate goal several agencies or individuals may work at cross purposes and negate each other's efforts. An example is a recent case elsewhere in which the probation officer confronted the parents bluntly while they were visiting the child in the hospital, without notifying the hospital personnel and letting them prepare the parents.

#### The Question of Reportability

The pathways described so far for obtaining help for the child are slow and cumbersome, not generally known, and only reluctantly used. Meanwhile many children who are admitted to hospitals in a precarious state are returned to the homes in which they acquired their problems, largely because the vague suspicions which their condition aroused were not acted upon effectively. There are no reliable statistics on the incidence of child mistreatment, even of the severe degree that results in hospitalization, because the condition is not coded and recorded in medical records even in the relatively few cases in which the physician realizes that the child's problems were induced by the parents. Our cases were compiled more from the memories of the hospital staff than from any official classification, and we realize that our list is incomplete.

Kempe advocated making the battered child syndrome a reportable condition like tuberculosis, and he is not alone. In the several conferences of physicians, judges and social workers sponsored by the Federal Children's Bureau in 1962 to discuss the problem of the battered child,<sup>3</sup> it was recommended that physicians and hospitals should be required to report cases suspicious of abuse of children. In order to be effective, this recommendation would require the enactment of laws which would safeguard the rights of the physician or institution reporting the case, as well as providing for appropriate agencies to investigate the reports, make recommendations and carry out the plans established.

At least in California, some of these laws have already been in existence for a long time. Section 11160 of the Penal Code requires hospitals to report injuries of various kinds to the appropriate law en-



forcement officer, be he chief of police, sheriff or other official. Physicians are similarly required to report injuries, according to Section 11161; while Section 11162 states that failure to report an inflicted injury is a misdemeanor. However, since the physician or hospital is in no way protected from libel suits and the agencies which investigate reported injuries are usually overburdened with other duties, the present means available offer insufficient real protection for the child.

### Methods of Handling the Problem

In some small areas of California, concern about this problem has already resulted in the development of well-defined means of handling it. One example is Los Angeles Children's Hospital, where, after meetings with judges, law enforcement officers and hospital personnel, a routine was established.<sup>2</sup> After the physician voices his initial suspicions, the social worker obtains supplementary history. One staff physician coordinates all the medical findings. The social worker informs the parents of the fact that the injuries found are going to be reported to the authorities, and then notifies the law enforcement agency. The law enforcement officer discusses the case with the social worker, obtains a written report and turns to the juvenile court. The probation officer then investigates the situation further, and communicates with the social worker who keeps the medical, social and probation planning coordinated. This may sound like a long, involved solution, but it is apparently resulting in more prompt planning for the child, and seems to be preventing possibly fatal further injuries.

In Stanislaus County,<sup>7</sup> interest in the battered child is also resulting in the establishment of a well-defined method for dealing with such cases. The physicians in the county hospital, both residents and attending staff, notify the social worker if they suspect inflicted injuries. After an interview, the social worker notifies the sheriff or the probation department if counseling will not suffice and legal action is indicated. The social worker also keeps a file of such cases that are reported to her and coordinates the information available on each case. The physician is thus spared the problem of making the contact with the legal authorities.

The physicians on the staff plan in the near future to submit an extension of this plan to the Stanislaus County Medical Association, and to propose that the physicians in the county submit all cases of abuse of children to the County Hospital Social Service Department. This procedure should result in uniform handling of cases, provide more significant data, and especially insure the safety of children

whose parents take them to a different physician or hospital each time they are injured.

Encouraging as such a plan sounds, it is significant that it is so far intended to include only the battered child, and provides in no way for those who have undergone emotional abuse or physical neglect. Since there are no legal safeguards for children in the latter categories, agencies are very limited in the means available to help them. Greater awareness by the public and especially legislators may result in more adequate provisions in the future.

### Guides for Physicians

The purpose of this paper is not to offer a cure for the problem of mistreated children, but rather to call attention to the neglected child, as well as to his better publicized brother, the battered child. We wish, however, to offer certain suggestions to help the physician who may encounter these children in the future.

1. Before the problem arises, familiarize yourself with the local agencies with whom you may have to deal. These include the Child Protective Services, which may be under either the welfare department or the probation department, and the juvenile detail of the police department. A committee of the county medical society may also be helpful.

2. If your local hospital has a medical social worker (and less than half of the hospitals in California do) discuss the problem with her and be sure that she knows the individuals to contact in the various agencies. If no social worker is available, the nearest county hospital social service department may be helpful either for consultation or actually to handle the further referrals required, as in Stanislaus County.

3. When you see a child with "failure to thrive," or with multiple injuries which are not well explained, or when you note considerable discrepancy between the history and the physical findings, keep your index of suspicion high. If you have any doubts about the x-ray interpretation of fractures or the reliability of the feeding history, look into the facts and enlist the help of the social worker to amplify your information.

4. If it is necessary to involve "the law," be sure that someone coordinates the efforts of the probation department or other agencies with your own. Again the social worker, if available, is the ideal person to do this; otherwise the physician should take the responsibility.

5. Before discharging the patient from the hospital, establish a clear plan for follow-up with the help of all those involved in the case, and periodically check the further progress of the child.

The individual physician cannot solve the prob-

lems of mistreated children alone. Only with community awareness and cooperation between all individuals involved, including medical, law enforcement, judicial, and social work, will programs evolve which will result in more effective help for these unfortunate children.

ADDENDUM: Since this article was submitted for publication three excellent articles on this subject were published in the June, 1963, issue of *Pediatrics*: (1) The physically abused child, Katherine Bain, 31:895, 1963; (2) The physician, the battered child, and the law, Fowler V. Harper, 31:899, 1963; and (3) Unsuspected trauma and multiple skeletal injuries during infancy and childhood, Thomas McHenry, Bertram R. Girdany and Elizabeth Elmer, 31:903, 1963.

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## Medical Authors and Professional Writers

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THE MEDICAL author\* is a reporter. In general he is an amateur in this field. Not all amateurs are inept, nor all professionals adept. On the average, though, the odds will be on the professional. When the physician assumes his temporary reportorial role it is because he wishes to communicate the results of his work or the sense of his thinking to his colleagues. Quite often he does this remarkably well. Not infrequently, however, his nonprofessional reporting does injustice to his professional work in the field of his competence. There is a remedy for this. Let's see if we can find it.

The reader of medical literature is struck by the inconsistent quality of the writing, some of it good or very good, but much of it bad or deplorable. Some journals maintain a consistently high literary standard. This must be at the cost of considerable editorial anguish and perhaps, occasionally, the rejection of a worthy piece of work because of unacceptable presentation. The remedy?

The principle of specialization has been productive in all fields. Shouldn't the reporting of research and clinical observation be a legitimate field for specialization? Let us separate the reportorial function; delegate it to a specialist in reporting and let the researcher continue with his own work. Make the medical reporter a member of the research team, as the anesthesiologist is a member of the surgical team. Let the writer's responsibility be the presentation of the researcher's results.

As we have acknowledged, the odds are on the professional. One who makes a profession of writing should write better than the amateur. Still, the exceptional amateur, as in many other fields, may equal or excel many of the professionals. In two groups, then, we might expect to find men well qualified to act as specialists in medical writing:

### *Group I: Professional Writers*

Consider one group: The present professionals who write on science for the laity. These men must be especially adept in writing interestingly and un-

- Medical writing is a legitimate field for specialization. The specialist literary consultant should be part of the research team. He could smooth the way for both researcher and reader, and could increase the researcher's productivity and his audience.

derstandably on abstruse subjects. Some of them certainly should be capable of so writing for the scientific or technical reader under the direction of the working scientist. Many a medical man has been exasperated by so-called medical writing in the public press. This, however, usually concerns the scientific or ethical content, rather than the presentation thereof. One may disagree heartily with what the reporter writes, while admiring his skill in writing it. We are talking, now, though, of a situation in which the fundamentals are supplied by the researcher, and his final revision assures accuracy of thought and content. With such supervision the proper science writer could soon adjust to the calm, objective, nondramatic approach of the scientist addressing scientists. For that matter, perhaps a touch of drama would work for readability. The article lacking readability will lack readers and might better have been left unwritten.

### *Group II: Competent Amateur Writers*

Here is another group which could furnish acceptable specialists in medical writing. Many physicians are intensely interested in and well qualified for medical writing. Some have even made it their life work, thus passing from amateur to professional status as writers.† The wide interest of medical men in this field is evidenced by the membership of the American Medical Writers' Association. This organization, founded in 1940, is "devoted to improvement of the written word of medicine." Most of its members are medical men; many of them could produce medical literature equaling or excelling that of most professional writers, in readability as well as in factuality. Some such men might be will-

\*In this article the terms *medical author*, *physician*, *researcher*, *scientist*, *physician* and *clinician* are used indiscriminately to mean any physician or allied scientist who has something to communicate to his colleagues.

Submitted January 29, 1963.

†Richard M. Hewitt, A.M., M.D., teacher of English before his medical qualification, went directly from internship to the editorial department of the *Journal of the American Medical Association*, and was later, for years, in charge of the *Section of Publications of the Mayo Clinic*.

ing to devote a large part or all of their professional effort to this work. They should be unbeatable as consultants or specialists in medical literature.

What is being discussed here is not mere editing; neither is it ghost writing, which some persons might consider unethical. It calls for team effort, with cooperation between the researcher, the clinician and the writer, each a professional in his own field. There will always be researchers who prefer to do their own writing and are justifiably satisfied with their output. Even these men might benefit from the revisions of language, emphasis or arrangement which the professional writer could suggest. Every writer, professional or not, can usually profit from an independent reading and evaluation of his work before it is submitted for publication. Objec-

tivity and a varied approach are the important factors here. At times, also, the researcher who usually does his own writing might wish to delegate a greater portion of the reporting in order to gain more time for his own work.

The aim in every case would be for an article saying what the researcher wishes to say, in interesting, readable and understandable form. The literary consultant could secure for the researcher the widest circle of readers, bringing ease and pleasure to the medical worker and reader alike.

In utilization of technical writers, working engineers seem to be ahead of physicians. Many professions and many branches of science could profit from this example.

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## Multiple Myeloma

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MULTIPLE MYELOMA, a disease involving neoplastic plasma cells, continues to be one of the most painful, relentlessly progressive, invariably fatal malignant disorders that may afflict man. Since bone destruction is a prominent feature of the illness, bone pain, bony fractures and hypercalcemia are commonly seen. In addition, increased susceptibility to infection, anemia, hemorrhagic phenomena, and renal insufficiency<sup>3</sup> are common. In contrast to many other malignant diseases, spontaneous remission, most authorities agree, does not occur in multiple myeloma.<sup>40</sup> Although there may be considerable variation in the duration of the disease, the average life span from the onset of symptoms is only 17 months.<sup>38</sup>

The specific therapy of myeloma remains less than satisfactory, and it is seldom that one can accomplish more than symptomatic relief.<sup>3</sup> Relatively recent techniques facilitating the study of serum and/or urine protein abnormalities observed in this disease have provided stimuli for much current investigative efforts, both clinical and biochemical.\* It is hoped that, with increased research interest in myeloma and related disorders, satisfactory therapy will eventually evolve. Despite the lack of good "specific" therapy for myeloma, it should be stressed that a conscientious physician who is aware of the complications of this disorder can accomplish much by properly employing nonspecific "conservative" measures.<sup>3</sup>

### DIAGNOSIS

The diagnosis of multiple myeloma depends on (1) evidence, by aspiration or biopsy, of plasma cell invasion of bone marrow, and (2) abnormal globulins (paraproteins) in serum and/or

urine.<sup>3,40,55</sup> Roentgenographic evidence of osteoporosis and/or lytic bone lesions is not considered a prerequisite but is helpful confirmatory evidence of the existence of the disseminated disease.<sup>39,57</sup>

Morphologically the plasma cells which typify this disease may vary from immature plasmacytes to normal appearing "mature" plasma cells in different patients, and even in the same patient.† In our experience there is little correlation between plasma cell morphologic features, electrophoretic mobility of abnormal globulins and prognosis.<sup>1,4</sup> Since myeloma cells may have a patchy distribution in bone marrow,<sup>1,40,55</sup> a minimum of three aspirations, at different sites, should be performed before the diagnosis is excluded. In attempting to establish the diagnosis it is best *not* to use the sternal site for aspiration of marrow, for the sternum may have become weakened by the destructive bony process and introduction of the needle may fracture it.<sup>3</sup>

Protein abnormalities in serum and/or urine in myeloma are characterized by the presence of one or more tall, sharp, homogeneous peaks anywhere in the globulin area by electrophoretic techniques.‡ Paper electrophoresis<sup>28</sup> has become the standard method in clinical medicine for diagnostic purposes. The mobility of the abnormal protein is most commonly that of gamma globulin, but peaks with beta and "M" mobilities (between beta and gamma) are by no means rare. Alpha peaks, however, are seen infrequently.<sup>12,55,58</sup> The medical literature contains reports of cases of multiple myeloma with *no* electrophoretic abnormality of serum or urine,<sup>12,36</sup> but these are very rare indeed. The authors, in a series of approximately five hundred cases, have observed only five patients without serum and/or urine protein electrophoretic abnormalities.

Roentgenographic abnormalities may not be present early in the course of the illness, but ultimately in every case of multiple myeloma, diffuse osteoporosis and/or lytic, "punched out" bone lesions de-

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\*Reference Nos. 5, 15-18, 31, 42, 43, 46.

†Reference Nos. 6, 25, 40, 55.

‡Reference Nos. 1, 12, 16, 41.

velop unless the patient dies early in the course of the illness.

At present most authorities agree that the disease entity labeled multiple myeloma is a part of a continuous spectrum of disease involving primarily plasma cell proliferation. On one end of the spectrum are cases of solitary plasmacytoma (intra- or extramedullary), and on the other end are cases of plasma cell leukemia.<sup>12,59</sup> Neoplastic plasma cells usually produce large quantities of abnormal globulins,<sup>12,40,45</sup> which, by virtue of their specific physical and chemical properties, may interfere with various physiological functions and may produce many of the clinical manifestations commonly seen in myeloma, such as blood coagulation defects, renal damage and circulatory impairments.\*

#### **PATHOLOGIC FEATURES**

Proliferation of foci of neoplastic plasma cells occurs predominantly in the skeletal structures that contain red marrow, especially spine, pelvis, ribs, sternum, skull and long bones. Thinning of bone cortex, and predilection to pathological fractures result.<sup>3,40,55</sup> Extramedullary lesions are not uncommon<sup>10,22</sup> and usually occur in organs containing the greatest number of reticuloendothelial elements.<sup>22</sup> Plasmacytomas, whether intra- or extramedullary, are typically extremely vascular.<sup>3,55</sup> Control of hemorrhage may present significant technical problems to the surgeon who may be asked to excise a specimen from one of these lesions for biopsy in an undiagnosed case. Hence, if myeloma is suspected, every effort should be made to establish the diagnosis by other means than surgical biopsy of an intra- or extramedullary tumor.

If the spinal cord is compressed by pathological vertebral fracture or by an expanding plasmacytoma, neurosurgical measures may be urgently needed to control the excruciating pain often associated with this complication, and to prevent cord damage.

Renal impairment, which develops in over 50 per cent of cases of multiple myeloma, may be caused by a variety of pathogenic mechanisms.<sup>7,40,50</sup> These include tubular destruction by myeloma proteins and/or excessive calcium loading, diffuse infiltration by plasma cells, and paramyeloid infiltrates. Entire nephron units ultimately become nonfunctional.<sup>19</sup> Paramyeloid may also invade other structures in myeloma. It has been postulated that this proteinaceous material is related to pathologic proteins of the Bence-Jones type<sup>40</sup> commonly found in urine (and recently in serum by immunoelectro-

phoretic techniques.<sup>42</sup> Intravenous pyelography may precipitate acute renal insufficiency in myeloma,<sup>4,30</sup> and the authors consider this procedure contraindicated in any patient who has or is suspected of having myeloma.

Polyneuropathy is another not uncommon pathologic feature observed in myeloma. Nerve damage may be related to pressure or infiltration by plasma cell tumor tissue, to pressure phenomena secondary to bony fracture, to paramyeloid infiltrations,<sup>11,55</sup> or to the obscure, as yet unexplained, neuropathic changes seen in association with a variety of other malignant diseases.<sup>24,56</sup>

#### **INCIDENCE, CLINICAL AND LABORATORY FINDINGS**

Multiple myeloma, once thought to be a rare disorder, has been diagnosed with increasing frequency in recent years. This undoubtedly reflects improved diagnostic techniques, an increased awareness of the disease and a longer average life span of man in the developed areas of the world. It is difficult to determine whether there is an actual increase in the incidence of the disease, but one excellent study<sup>33</sup> concluded that the cumulative risk of myeloma developing in any person reaching the seventh decade is about 1 in 1,000. Males predominate by from 4 per cent to 22 per cent in various reported series,<sup>1,33</sup> and the disorder is somewhat more common among Negroes.<sup>33</sup> In a study of 61 cases<sup>1</sup> reported by one of us (W.S.A.), signs and symptoms were summarized in decreasing order of frequency as follows: poor dentition, 98 per cent; age over 50, 89 per cent; male, 72 per cent; pain (bone pain per se, or fracture), 68 per cent; weight loss, 68 per cent; gastrointestinal (anorexia, nausea and vomiting, diarrhea and constipation), 62 per cent; fever (usually low grade), 52 per cent; pallor, 47 per cent; hemorrhagic phenomena, 39 per cent; neurological, 35 per cent; hepatomegaly, 26 per cent; palpable bone tumors, 22 per cent; and splenomegaly, 9 per cent. In the same study, the incidence of laboratory findings (including roentgenographic) was: electrophoretic abnormalities (of serum and/or urine), 100 per cent; increased numbers of plasma cells in marrow aspirates, 100 per cent; anemia, 86 per cent; roentgenographic changes in bone, 86 per cent; hypoalbuminemia, 84 per cent; hyperglobulinemia, 67 per cent; rouleau formation, 60 per cent; renal insufficiency, 57 per cent; hyperproteinemia, 52 per cent; elevated alkaline phosphatase, 48 per cent; Bence-Jones proteinuria, 47 per cent; azotemia, 46 per cent; anticomplementary Wassermann, 25 per cent; plasma cells in the peripheral blood, 25 per cent; hypercalcemia, 24 per cent; hyperphosphatemia, 22 per cent; and leukopenia, 11 per cent.

\*Reference Nos. 4, 7, 14, 40, 44, 55, 59.



## Conservative Measures

The management of multiple myeloma may present formidable problems to the clinician.<sup>3</sup> Many or all of the major complications of this disorder are ultimately experienced by the individual patient. Prolonged stay in hospital and expert nursing care<sup>35</sup> are often required. Optimal conservative therapy may involve (1) the proper use of analgesics, local irradiation and neurosurgical procedures for relief of pain; (2) orthopedic assistance in managing the difficult problems associated with pathologic bony fractures; (3) recognition of and prompt efforts to control hypercalcemia; (4) early and effective treatment of bacterial infections; (5) judicious use of transfusions, administering them only when anemia is severe and the patient has symptoms related to it; and (6) local and systemic therapy for hemorrhagic phenomena, which may arise from a variety of causes.<sup>4,44</sup> There is no well documented evidence to date that patients treated with well applied conservative measures *and* so-called "specific therapy" fare better than those treated with similar conservative measures alone.<sup>34</sup>

## Specific Therapy

Specific therapy administered with the intent to destroy, impede the growth of, or otherwise inactivate neoplastic plasma cells in multiple myeloma has been relatively unsatisfactory to date.<sup>3</sup> Although extramedullary lesions are usually radiosensitive,<sup>23,54,55</sup> evidence is inconclusive that much can be accomplished by irradiation of intramedullary involvement, other than relief of bone pain.<sup>3,37,55</sup> Diffuse irradiation with x-ray has its obvious limitations. Various radioactive isotopes have been tried in myeloma,<sup>20,27,29</sup> and there is some evidence that radioactive phosphorus ( $P^{32}$ ) has provided improvement in a few patients.<sup>29,47</sup> Since myeloma cells have not been shown conclusively to take up any known radioisotope, the use of antineoplastic chemotherapeutic agents would seem to be a more logical therapeutic approach. Urethane,<sup>32,48,49</sup> adrenocortical steroids and ACTH\* have provided objective and subjective improvement in some patients. Although urethane is still considered by many authorities to be the agent of choice,<sup>21,32,40</sup> the authors now rarely use it because (1) the unpleasant side effects (principally gastrointestinal) often preclude prolonged administration, and (2) there is a delay in response (four to six weeks) in the occasional patient who does respond and who is able to tolerate the drug. Adrenocortical steroids and ACTH have been used extensively by us,<sup>†</sup> and have been

shown to be helpful in combating several of the complications of myeloma.<sup>3,44,53</sup> In no case, however (with one possible exception), has unequivocal evidence of regression of osteolytic lesions been demonstrated. We have found that androgens, given with corticoids or ACTH, are useful in diminishing the anti-anabolic effects of the corticosteroid drugs, apparently without reducing their effectiveness.<sup>4,51,53</sup>

Many other chemotherapeutic agents have been tried in myeloma, but most have been abandoned because of severe side reactions or lack of effect. Several of the newer drugs, however, look promising, especially cyclophosphamide (Cytosan®)<sup>‡</sup> and L-phenylalanine mustard. Although we have had very little personal experience with L-phenylalanine mustard, a recent report by Bergsagel and his associates<sup>9</sup> documented significant objective improvement in 14 of 24 patients treated with this alkylating agent.

In the past three years the authors have become particularly interested in results obtained with cyclophosphamide, a cyclic nitrogen mustard phosphamide ester. Long-term clinical and metabolic studies to evaluate and document the efficacy of this drug in myeloma have been undertaken. Our Cytosan treated patients to date number 18. Four of them have been studied for long periods as in-patients on a metabolic research ward utilizing metabolic balance techniques to determine the effects of cyclo-

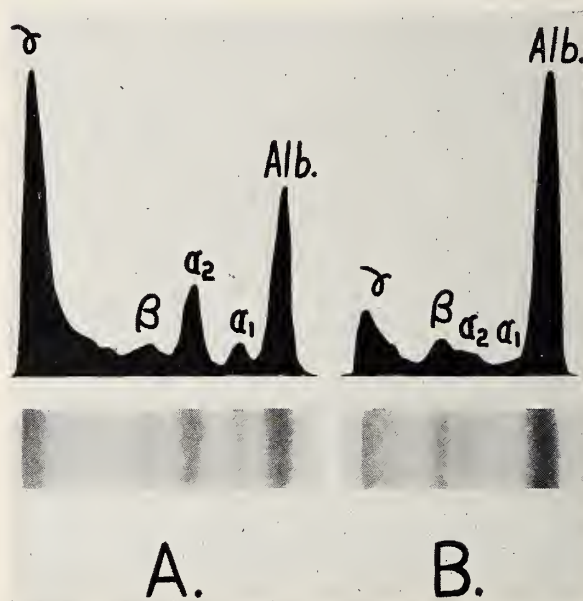


Figure 1.—Serum electrophoretic patterns of a patient with multiple myeloma treated with cyclophosphamide. A, pattern before cyclophosphamide therapy (total protein 10.7 gm per 100 ml). B, pattern after 11 months of cyclophosphamide therapy (total protein 7.3 gm per 100 ml). For discussion, see text.

\*Reference Nos. 2, 3, 51, 53, 54.

†Reference Nos. 2-4, 51, 53, 54.

‡Reference Nos. 4, 8, 13, 26.

phosphamide on exchanges of calcium, phosphorus and nitrogen, as well as on other clinical and laboratory parameters. Detailed results of these and additional studies will be the subject of a subsequent report.<sup>52</sup> In brief, however, observations of metabolic balance indicate that cyclophosphamide lessens the catabolic effects of the disease on normal tissue and decreases the rate of bone destruction. Three of the four patients were alive and receiving the drug at the time of this writing. One was almost moribund when cyclophosphamide was begun 12 months before. At the time of this report he was ambulatory, there had been no worsening of bony lesions as determined roentgenographically (recent films even suggesting some remineralization of lumbar vertebrae), and abnormal serum gamma globulin had fallen from 50 per cent to 30 per cent of total serum proteins. Another of these patients, a woman with a large intrathoracic plasmacytoma, had no increase in symptoms (which were mild) in the seven months she had received cyclophosphamide, and the plasmacytoma was slightly decreased in size. The third patient, a man whose illness previously had been complicated by profound anemia, had required no transfusions and no new lytic bone lesions had developed in the five months he had been receiving cyclophosphamide at the time this report was written. The fourth patient, a woman

who had had myeloma for over three years, died suddenly at home of unknown cause. Long-term evaluation of cyclophosphamide was impossible, as she had received the drug for only three months.

Several of the other patients in our series, not studied by metabolic balance techniques, improved dramatically. One, a man who had had myeloma for over two years and who was bedridden when treatment with cyclophosphamide was begun, was ambulatory at the time of this report, 11 months later. He had had a tall serum gamma paraprotein peak on electrophoresis, which had virtually disappeared (Figure 1) at the time of this writing, and the hematocrit had risen from 21 per cent to 33 per cent. A previously noted large paravertebral plasmacytoma could no longer be seen by roentgenography (Figure 2). Another patient, bedridden with severe bone pain, and almost moribund with pronounced hypercalcemia and azotemia, had been receiving cyclophosphamide for a year at the time of this report. Within two months after the drug was started he was ambulatory, no longer had hypercalcemia and his bone pain had greatly diminished. This improvement was maintained and x-ray films of the bone revealed no significant progression of multiple lesions. One other patient, who also had been receiving cyclophosphamide for a year, had a similar dramatic response. Lesser, but still impres-

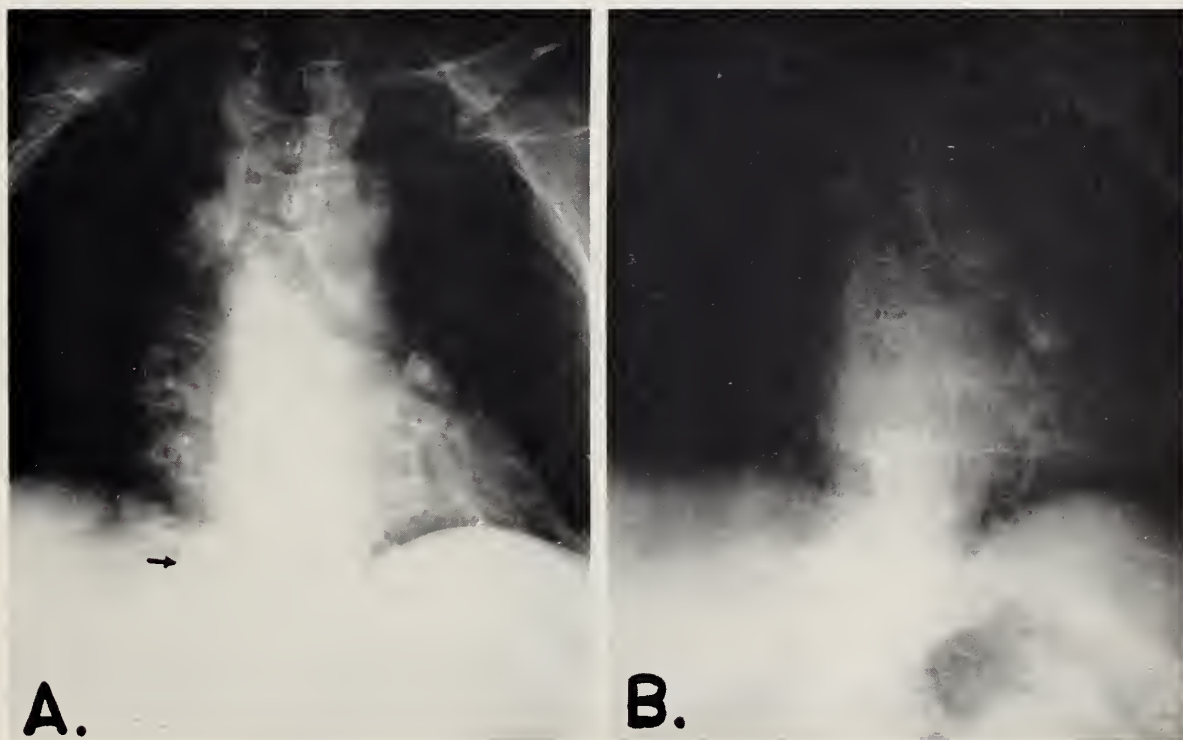


Figure 2.—Roentgenograms of a patient with multiple myeloma treated with cyclophosphamide. *A*, film taken prior to cyclophosphamide therapy. The arrow points to a large paravertebral plasmacytoma. *B*, film taken after ten months of cyclophosphamide therapy. The plasmacytoma is no longer visualized. For discussion, see text.



sive, subjective and/or objective improvement was observed in all but four of the remaining patients of the series. Ten of the 18 patients received prednisone in addition to cyclophosphamide for short or extended periods during cyclophosphamide administration. Prednisone was administered to assist in the management of hypercalcemia<sup>3,54</sup> in some patients, and in others to promote a sense of well-being and to aid in attempts to diminish bone pain. In those that received prednisone for long periods, small total daily doses (10 to 20 mg) were used to minimize undesirable corticosteroid side effects and yet still provide some additive benefit. In initiating cyclophosphamide therapy, it has been our practice to begin with 200 mg per day (given in divided doses) and to do leukocyte counts twice weekly. When the total leukocyte content falls to between 2,000 and 2,500 per cu mm of blood, cyclophosphamide is discontinued temporarily. When it rises again above 2,500, cyclophosphamide is resumed at maintenance levels of 50 to 100 mg per day. Leukocyte counts are then done weekly and the drug is continued as long as possible. Dosage adjustments are made as required to keep the leukocyte content above 2,500 per cu mm.

Although cyclophosphamide appears to be a useful drug in the therapy of myeloma, there is insufficient evidence as yet in our series, or in other reports, for clearly considering it the "treatment of choice" for myeloma. A much larger number of carefully documented cases will be required even for a conclusion that the drug adds significantly to what can be done with well applied conservative measures to give patients a longer, more comfortable, useful life.

The therapeutic prospects for the future in myeloma are probably relatively bright. Research advancing basic knowledge of protein biochemistry and immunology is mushrooming to astounding proportions in laboratories all over the world. It is logical to consider that multiple myeloma, a disease almost always associated with the production of large quantities of abnormal serum and/or urine proteins by neoplastic plasma cells, would provide a unique model to apply more readily such newly acquired information in devising much more satisfactory specific therapy than is at present available.

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# Tumors of the Soft Tissues

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SUCCESSFUL TREATMENT of neoplasms of mesenchymal origin requires the strict discipline that must be applied when dealing with malignant disease of any type—namely, early recognition, accurate diagnosis and total excision or destruction by irradiation. Treatment is notoriously unsuccessful in the highly malignant sarcomas of soft tissues because their growth is insidious, obscurities of histogenesis may prevent or delay proper identification, and the humanitarian instincts of the surgeon often prevent the early radical excision or amputation that offers the only hope of cure. Piecemeal pursuit of more differentiated tumors such as “low grade” fibrosarcomas result in inoperable recurrences or metastasis.

In the past decade clearer understanding of benign tumor-like proliferations of fibrous tissues has developed and sharper separation of such entities as fasciitis or fibromatosis from true neoplasms—distinctions that are mandatory to prevent unnecessary mutilation or amputation—has become possible.

## RECOGNITION AND EARLY DIAGNOSIS

Most sarcomas of soft tissues occur on the trunk or extremities. In this study we will also include those that arise in such sites as the retroperitoneum and thoracic cavity. Other chapters deal with discussion of the diagnosis and treatment of mesenchymal neoplasms of specialized organs such as the uterus and stomach.

Nearly all tumors of soft tissues appear as a mass; in rare instances ulceration of the covering skin or diffuse thickening of an area may be the first sign. With diffuse liposarcoma, myosarcoma and other poorly defined entities, increase in the circumference of an extremity may provide the only clue to the presence of a tumor.

Once a mass has been found by an anxious patient or discovered during a careful physical examination, considerable investigation must precede biopsy and definitive treatment.

Certain historical facts may help to gauge growth rate, detect specific trauma and uncover such possibilities as disseminated infectious, proliferative or neoplastic diseases of which the nodule may be the dominant clinical manifestation. An almost forgotten puncture wound can result in deep implan-

tation of epidermis and the resultant cyst may take years to develop. Single or multiple injections may produce stony-hard masses in soft tissue, depending on the vehicle used to suspend the drug.<sup>4</sup> Hematomas and myositis ossificans are known to follow single trauma. Adiposis dolorosa and Weber-Christian's disease have characteristic clinical manifestations. Masses are often produced by subcutaneous mycosis or tuberculosis; nodular leprosy may be an enigma to the uninitiated; *café au lait* spots on the skin of a patient with a rapidly growing tumor should suggest the possibility of neurofibrosarcoma.

Although rare, metastasis to deep soft tissues does occur. Most commonly the metastatic lesions spread from melanomas and carcinomas of the kidney, lung, breast and stomach. Such unorthodox behavior is frequently associated with a lack of differentiation; since it may occur without signs or symptoms to direct the physician's attention to the organ of origin, the secondary lesion may be erroneously interpreted as anaplastic sarcoma.

The significance of soft tissue masses in operative sites may be overlooked. After an appendectomy a desmoid tumor may cause sarcoma-like fibrosis of the abdominal wall. Clinically similar masses have been produced by mechanical transplantation of carcinoma of the bladder during cystotomy or cystectomy.

Emphasis is placed on the need for exhaustive detective work in dealing with soft tissue tumors because a single mass with or without symptoms may be the only positive finding in an apparently healthy patient; preoccupation with this tumor frequently diverts attention from the possibility that it is metastatic. The pathologist should not have to ask when the mole was burned off if a tumor, say deep in the deltoid muscle, is pigmented and is unmistakably metastatic malignant melanoma. If such a tumor is not pigmented and is composed of spindle shaped cells, failure to uncover a history of melanoma could result in a fruitless forequarter amputation for “sarcoma.” The mimicry of melanomas has been emphasized by Ackerman.<sup>1</sup>

## LOCAL CLINICAL MANIFESTATIONS

If after careful study of the whole patient a soft tissue mass must be considered autonomous, the art of physical examination should be combined with

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exact knowledge of anatomic relationships. Such features as fixation to skin, apparent limitation to subcutaneous fat, incorporation in distinct muscle groups, involvement of tendon sheaths or attachment to bone or joint will provide clues to the type of tumor and will be important factors in defining treatment. Classic signs of inflammation are sometimes produced by rapidly growing tumors.

After the clinical and laboratory findings have been obtained, the temptation to operate immediately must be overcome long enough to obtain roentgenograms. They may not help at all, but at times they are virtually diagnostic. To illustrate, we need only mention osteogenic or Ewing's sarcoma appearing as large soft tissue extensions. Extra-osseous or parosteal myelomas may mimic primary soft tissue tumors; lytic changes in adjacent or remote bones will suggest the nature of the soft tissue mass. Calcification in the belly of a muscle should suggest myositis ossificans. The long roentgen exposures at low voltage described long ago by Warren<sup>17</sup> and at present under intensive reappraisal<sup>6</sup> as a means of accurately localizing and characterizing mammary tumors may, with meticulous pathological correlation, provide a refined method for proper identification of some types of subcutaneous masses elsewhere.

In light of the excellent results obtained in diagnosis of intracranial and renal neoplasms, arteriography has become an established method for determining the vascular patterns and estimating the anatomic limits of certain soft tissue tumors of the extremities. In some cases the malignant character of a tumor can be strongly suspected if not established.<sup>13</sup>

For more than a decade ultrasonic energy has been under investigation as a method for outlining soft tissue structures of the human body.<sup>9</sup> Refinements of the technique long used for maritime depth finding have already resulted in delineation of masses that cannot be selectively outlined by roentgenography. As the apparatus and technique become less cumbersome and increasing numbers of normal tissues and tumors are studied, ultrasonography should soon become a valuable and harmless adjunct to radiography for localization and possibly for diagnosis of certain soft tissue masses.<sup>16</sup>

#### BIOPSY

The exact nature of a soft tissue tumor can be determined only by microscopic examination. Excepting those masses so small and so situated that they can be completely removed for purposes of diagnosis (so-called *excisional biopsy*), representative tissue is best obtained by sharp incision (*incisional biopsy*). The problems of differentiation

between benign and malignant soft tissue masses or of proper histogenetic identification are potentially so great that curetted, cauterized or aspirated fragments offer minimal opportunity to provide a correct diagnosis: There have been instances in which crushed, burned or macerated tissues have been called benign when actually they were malignant, and vice versa. The pathologist is often forced to designate such material as inadequate or unsatisfactory for interpretation. Even if he can salvage enough undamaged tissue from an unsatisfactory specimen to render a diagnosis, the painstaking work of doing so and then of examining the tissue may take a week or more of valuable time.

As with other tumors, relationships to adjacent structures are often important aids in diagnosis and prediction of behavior. Such relationships can be determined at least partly by careful selection of biopsy sites. Confusion between a tumor and a pseudocapsule of compressed normal tissues or a fibrous proliferative reaction to an expanding mass is a frequent source of error. These barriers often reach a thickness of one centimeter or more and become harder than the tumor beneath. Even highly experienced surgeons who felt sure that biopsy material they had taken from such tissue was truly representative of the tumor have been known to be wrong, sometimes with disastrous result.

#### HANDLING OF THE BIOPSY

If the patient has been psychologically and medically prepared for radical excision or amputation, frozen section may permit an unequivocal diagnosis and the definitive operation can be performed immediately. Because of the broad zone of indistinction between benign and malignant in some tumors, particularly those of fibrous nature, accurate diagnosis of frozen sections may be impossible. A piece of tissue that has been boiled or frozen fresh usually is artifactually distorted enough to make it unsatisfactory for permanent sections. At least part of all biopsy material should be fixed in Zenker's fluid for optimum preservation of cellular detail. If the tumor is variable in color or consistency, multiple samples are often necessary. Squeezing or crushing must be avoided. We stress the need for meticulous care in selection of areas and in the processing of tissues removed for diagnosis, because the patient's life or limb can depend on the technical prelude to the pathologist's examination.

Although tissue culture, electron microscopy and histochemical analysis are not by themselves definitive diagnostic procedures, in selected instances they may provide supplementary information that will determine the true histogenetic nature of a tumor. Where such specialized laboratory functions are



available, it is best that communication between the surgeon and the investigator be established before operation, particularly if the tumor in question has puzzling clinical manifestations. For these studies, preparations must be made for proper handling of the tissues as soon as they are removed.

#### CLASSIFICATION OF SOFT TISSUE TUMORS

Classification of most benign and malignant neoplasms depends on the type of tissue from which they derive. Nomenclature based on histogenesis is easily applied when the tumor is composed of a single cell type and is well differentiated. Confusion increases with anaplasia; poorly differentiated neoplasms may be impossible to classify as to cell type or tissue of origin—for example, sarcoma or carcinoma.

Most tumors arising in soft tissues derive from mesenchyme. Rarely in such lesions several distinct cell patterns may develop and the tumors be designated as "mesenchymomas." More commonly, metaplasia occurs. Designation of such neoplasms by compound names descriptive of each component may call attention to the pathologist's keen observations but serves only to confuse the clinician. A fibro-myxoliposarcoma is usually nothing more complicated than a liposarcoma composed of cells in various stages of differentiation.

#### Tumors of Fibrous Tissue

If all neoplasms of connective tissue origin could be placed neatly in one of two categories, fibroma or fibrosarcoma, it would be simple to deal with such masses. The restrictions of dogmatic textbook classifications undoubtedly contributed to the long delay in separation of benign proliferative entities such as fasciitis and fibromatosis from true neoplasms. When Konwaler, Keasbey and Kaplan<sup>12</sup> correctly interpreted eight cases of subcutaneous pseudosarcomatous fibromatosis, they did so despite rather frightening histologic patterns and opposing convictions of a substantial number of their colleagues. Of 55 cases of nodular fasciitis reviewed by Price and coworkers,<sup>14</sup> 20 had been called sarcoma by other pathologists. An additional 11 cases had been placed in an uncertain category. Fifty-six of Stout's 123 cases of pseudosarcomatous fasciitis in children<sup>15</sup> were considered malignant by others. Combination of careful histologic study with follow-up has been responsible for recognition of the benign and usually nonrecurring nature of these proliferative lesions.

The tumor of fasciitis frequently develops rapidly—within a few days to a month. In a series of 70 cases reported by Hutter and coworkers,<sup>10</sup> about a third of the patients complained of pain, somewhat

fewer of tenderness. The lesions are usually one to two centimeters in diameter and rarely exceed five centimeters. They have been called sarcomas because they infiltrate fat and muscle and frequently display considerable mitotic activity. The subtleties of histologic differentiation are discussed and well illustrated in the articles mentioned.

#### Tumors of Fatty Tissue

Here the most frequent problem in differential diagnosis is distinction between other mesenchymal tumors infiltrating fat, liposarcoma and lipoma. Malignant tumors of adipose tissue, most commonly occurring in the lower extremities and retroperitoneum, often show gradations from mature fat to nodules of myxomatous or highly cellular tissue. Inadequate sampling limited to the grossly well-differentiated nodules can result in an erroneous interpretation. Multiple sections may be required to establish the malignant nature of well differentiated, slowly growing liposarcomas. Frozen sections stained for fat are helpful in distinguishing cellular or myxomatous liposarcomas from other mesenchymal neoplasms. The advancing borders of fibrosarcomas or myosarcomas often isolate normal fat cells or droplets. The utmost skill of the pathologist is required for correct interpretation of such tissue mixtures.

#### Tumors of Blood Vessels

The malignant variant of vascular tumors is known as angiosarcoma. The term *hemangioendothelioma* requires the qualifying adjective *benign* or *malignant*. Infiltrative growths with a distinct vascular pattern occurring in infants and children are often malformations that may provoke unwarranted and mutilating surgical operation. When the extremely rare malignant counterparts of these tumors are encountered they usually occur in adults and the vascular pattern, obscured by extreme cellularity, is often nicely outlined by silver-reticulin stains.

#### Tumors of Muscle

Benign tumors of the striated muscles of the extremities are medical curiosities. Leiomyomas are usually found in the dermis and presumably arise from appendageal smooth muscle. Rhabdomyosarcomas are characterized by rapid growth with vascular invasion, pleomorphic and bizarre cell shapes and an almost hopeless prognosis. The yield of tell-tale cross striations is frequently proportional to the diligence of search. Embryonal and alveolar forms cause the greatest difficulty in histogenetic interpretation.

Until the search for the histologic ancestors of two other classes of tumors is successful, they will be included in the muscle dynasty for convenience

but without conviction. So-called granular cell myoblastoma is a benign and possibly a proliferative (or degenerative) lesion with large pale granular cells. Once these were called xanthoma cells. Their intimate relationship to muscle fibers, particularly in the tongue, led to the designation *myoblastoma*. Dissatisfaction with this doctrine and discovery of masses of similar cells unassociated with muscle have prompted investigators to study these tumors intensively. Electron micrographic and histochemical evidence presented by Fisher<sup>7</sup> supports the earlier contention by Fust and Custer<sup>8</sup> that the granular cells may be derived from nerves.

The majority of tumors reported as malignant granular cell myoblastomas should probably be given the less committal designation *alveolar soft part sarcoma*. Other investigators insist that certain of these neoplasms with an alveolar arrangement of plump cells in a well defined reticular stroma are malignant versions of non-chromaffin paragangliomas. If any of these diagnoses is rendered by a pathologist the surgeon should recognize that he is dealing with a malignant tumor capable of distant metastasis but one that offers a more favorable prognosis than rhabdomyosarcoma.<sup>5</sup>

#### Tumors of Nerve Sheath

Palisading of nuclei, long emphasized as a characteristic of tumors of peripheral nerves, can be a striking feature of benign and malignant neoplasms of fibrous tissue or smooth muscle. To the problem of histogenetic differentiation must be added the one of distinguishing between benign and malignant tumors of nerve sheath. This is particularly important when dealing with the single or multiple growths that involve the peripheral nerves of patients with von Recklinghausen's neurofibromatosis. One of the most difficult problems faced by the surgeon is selection of the proper level of excision or amputation for a tumor that may grow along a nerve for great distances proximal to a dominant and highly malignant mass.

#### Tumors of Synovium

The proliferative potential of synovium is remarkable. Sophistication in recognition of the true nature of inflammatory or traumatic overgrowth of the tissues lining joints or tendon sheaths has increased considerably in the past two decades. Recently pathologists have outgrown a phase during which they rendered a diagnosis of synovial sarcoma for a number of soft tissue tumors they did not recognize. Properly a synovial sarcoma should consist of two components—a prominent neoplastic mesothelial cell lining cleft-like spaces and a spindle-shaped "stromal" element which alone resembles the cell of fibrosarcoma. An interesting feature of

malignant tumors of synovium is the rarity with which they grow into joint cavities. This may be a valuable clinical clue in distinguishing a sarcoma from a proliferative reaction, which often fills and distends the joint space.

#### TREATMENT OF SOFT TISSUE TUMORS

Excision is the treatment of choice for nearly all tumors of the soft tissues. Radiotherapy is of limited usefulness and principally palliative. The results are often unpredictable.<sup>2</sup> Destruction of malignant neoplasms by chemical perfusion of organs and extremities is only in the preliminary investigative phase.

Although there have been no recent spectacular advances in the treatment of peripheral sarcomas, painstaking clinicopathologic correlations have produced an increasingly strict definition of the crucial term "adequate excision" to include immediate amputation for many primary malignant tumors of the deep tissues of the extremities. Well-meaning attempts to peel sarcomas from the muscles or blood vessels that are necessary for the proper functioning of an arm or leg frequently deprive the patient of his only chance for cure. "Shelling out" sarcomas is as ineffective as digital enucleation of carcinoma of the breast and almost invariably results in tearing a pseudocapsule away from invisible viable roots of malignant cells.

For tumors that can be correctly identified by frozen section, the analogy to mammary tumors is still apt. If the mass is benign, local removal will suffice. If it is proliferative fasciitis or a vascular malformation, further operation may not be necessary.

If the tumor is malignant, a complete change of instruments, gloves and drapes is mandatory. Sarcoma cells should be regarded as lethal bacteria. Upon diagnosis of sarcoma from examination of permanent or frozen section, the surgeon should excise *en bloc* the skin incision, the biopsy site and the tumor, allowing margins so wide that he does not cut through involved tissues at any site. This form of local excision is indicated for well differentiated superficial fibrosarcomas and liposarcomas and occasionally for easily accessible synovial sarcomas in children.<sup>3</sup> It must be stressed that to qualify for local excision tumors must be small and not near major neuro-vascular bundles.

The pathologist and the surgeon must cooperate in establishing the anatomic relationships of the excised specimen. An ancient method of determining the adequacy of excision is often not fully exploited. By applying india ink to the deep and lateral tissue boundaries of the intact specimen, the pathologist can readily identify excisional limits under the



microscope. He must make sure, however, when examining a section in which tumor seems to extend to a deep surface, that this appearance is not misleading owing to slanting of the specimen. Before excision or amputation is advised, serial sections should be made from the paraffin block until sections bordered on three sides by the marking ink are obtained. We have frequently observed adequate margins of normal tissue beneath tumors that in preliminary sections appeared to be transected because the block was tilted a few degrees in the microtome.

Variables that influence decision as to when and where to amputate include the type, the size and the location of the tumor. It is not possible to tabulate specific indications of the kind that are so useful in defining treatment of tumors of the breast. This is because of the relatively small series of sarcomas reported with prolonged follow-up and the inevitable inclusion of cases of dubious histogenesis and unpredictable behavior. Even among the easily identified tumors there is a great variation in life history. Although some sarcomas spread to regional lymph nodes, in most cases metastasis is haphazard and by vascular routes. Rhabdomyosarcomas, synovial sarcomas and poorly differentiated fibrosarcomas, liposarcomas and malignant schwannomas usually necessitate amputation and rarely is there hope in a second operation if the first is not successful. The more peripheral sarcomas offer the best prognosis while those in the upper arm or proximal thigh that can be encompassed only by forequarter dissection or hemipelvectomy have the worst.

#### PROGNOSIS

The same variables that make the choice of treatment of soft tissue sarcomas difficult account for wide divergences in statistics on survival. In a tabulation recently published by the American Cancer Society<sup>11</sup> the absolute five-year survival rate in 732 cases of soft tissue sarcoma was 27.7 per cent. None of the cases was listed according to stage. For those that occurred on the trunk the overall survival for five years was 50 per cent. Of 78 patients with tumors of the upper extremities, 46 per cent were alive five years after treatment; in 195 patients with soft tissue sarcomas of the lower extremity 32.3 per cent lived past five years; and the worst results (16.7 per cent survival) occurred in 149 patients with retroperitoneal sarcomas.

Synovial sarcomas, rhabdomyosarcomas and extra-osseous osteogenic sarcomas are the least curable because of the aggressive behavior of their cells and their tendency to occur in deep tissues. Dermatofibrosarcoma protuberans is detectable early, is superficial, and is usually composed of well differen-

tiated cells. Nine of 13 patients with this tumor lived over five years. Between these extremes one can place the *overall* behavior of fibrosarcomas, liposarcomas and malignant neurilemmomas. Within any histologic class of soft tissue tumors, however, there may be variants that range from hopeless to curable.

#### CONCLUSION

Prediction of behavior and selection of treatment of tumors of the soft tissues require scrupulous pre-operative investigation to define the extent of the tumor and extreme care in selection, handling and interpretation of biopsy. Presentation of patients to consultative tumor boards and referral of equivocal histologic sections to pathologists who have had the greatest experience with the least common sarcomas are two means of assuring better treatment of puzzling cases.

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# CASE REPORTS

## Resection and Graft Replacement of an Aneurysm of the Ascending Thoracic Aorta With Simultaneous Repair of Aortic Valvular Insufficiency

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AN ANEURYSM of the ascending thoracic aorta frequently is accompanied or is followed by aortic insufficiency. It may arise from dilatation of the annulus of the aortic valve by expansion of the adjacent arterial wall, but it may also be the end result of a disease process that has affected both arterial wall and valve structure.

Aortic insufficiency and aneurysm of the ascending aorta have been dealt with as separate entities by a number of investigators. Muller and associates presented a comprehensive review of the various surgical approaches currently employed for the treatment of aortic insufficiency.<sup>6</sup> Bahnson and Spencer reported their results in eight cases of aneurysm of the ascending aorta.<sup>1</sup>

Although most aneurysms of the ascending aorta are the result of atherosclerosis or syphilis, a significant number arise as the result of cystic medial necrosis of the aortic wall. In 1930, Erdman described "medionecrosis aortae idiopathica cystica," in which morphologic findings were similar to those noted in the vessels of patients with Marfan's syndrome.<sup>4</sup> (This relationship was described by Baer, Taussig, and Oppenheimer in 1942.)<sup>2</sup> Weaver, Edwards and Brandenburg postulated that idiopathic dilatation of the aorta with aortic valvular insufficiency may be a *forme fruste* of Marfan's syndrome.<sup>7</sup>

Ellis, Cooley, and DeBakey coined the term *annulo-aortic ectasis* to describe the coexistence of aortic insufficiency and an aneurysm of the ascending aorta.<sup>3</sup> In the case they reported, end-to-end anastomosis of the divided aorta was accomplished without the necessity of inserting a graft. The

following case report is presented to illustrate the manner in which principles of heart and blood vessel surgery may be applied to these problems.

### REPORT OF A CASE

The patient, a 42-year-old white man, had been employed as a truck driver but was forced to stop work in early 1960 because of increasing angina and episodes of tachycardia associated with light-headedness and transitory blindness. He first began to notice exertional dyspnea and fatigue in 1952, and at that time an aortic diastolic murmur was detected. The symptoms gradually progressed until the patient was put in hospital in December, 1960, for treatment of congestive failure. Following administration of digitalis and diuretics, he improved sufficiently to return home, although he was unable to resume his former employment.

In July, 1961, the patient was admitted to the University of California Medical Center, Los Angeles, with complaint of increasing disability due to chest pain and shortness of breath. He recalled having had several attacks of tonsillitis in childhood but was unaware of any long illness. At age 22, he had had rheumatic joint pains which subsided gradually over a period of several weeks. In 1943, he was put in hospital for pulmonary tuberculosis involving the right upper lobe. In 1958 resection of the apical segment of the right upper lobe was carried out.

Upon physical examination the patient was observed to be thin and he appeared chronically ill. When he sat erect, some bobbing of the head occurred. Blood pressure ranged from 145/20 to 170/50 mm of mercury. The pulse rate was 80 per minute, with an occasional irregular beat. The precordial region was hyperactive, and a prominent left ventricular heave was noted. A thrill was present over the proximal aorta and at the apex of the heart, and a strong aortic thrust over the right side of the sternum. An early Grade III diastolic murmur was present at the aortic area, and a late Grade II systolic murmur in the same region. The peripheral pulses were accentuated, and capillary pulsations notable in the nail beds. Duroziez's murmur was present over the femoral arteries.

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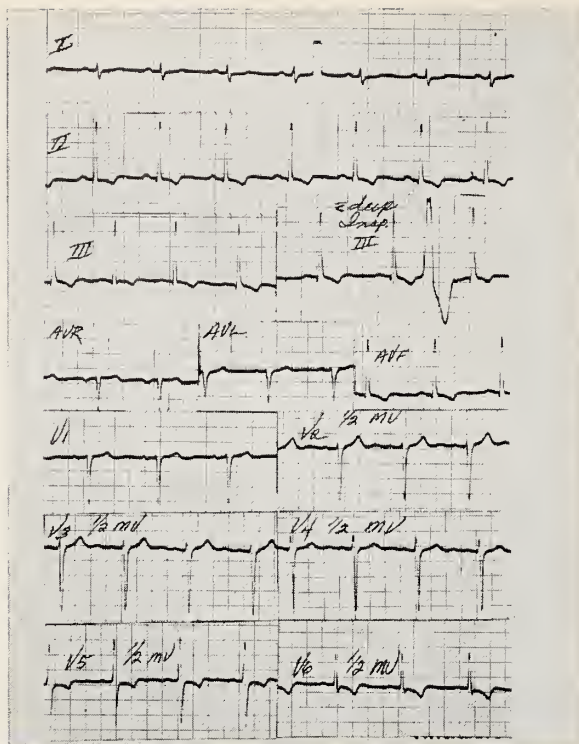


Figure 1.—Preoperative electrocardiogram consistent with biventricular hypertrophy.

The electrocardiogram was interpreted as showing biventricular hypertrophy, with changes more prominent over the left ventricle (Figure 1). X-ray films of the chest showed moderate cardiac en-

largement. The ascending aorta was thought to be dilated, and calcification was noted in the proximal aorta. The arch was prominent (Figure 2).

The chest was opened by median sternotomy and an aneurysm was noted along the right anterolateral surface of the aortic wall. The aneurysm was sacular in configuration, and thin plates of calcium were palpable within its wall. The left ventricle was greatly enlarged. Upon cannulating the femoral artery, advanced atheromatous changes were noted, which lent support to the impression that a similar process was at least partly responsible for weakness of the aortic wall.

The ascending aorta was mobilized from the level of the right coronary artery to the innominate artery. Extracorporeal circulation was begun, and body temperature was lowered from 37°C to 31.5°C. The aorta was cross-clamped proximal to the innominate artery, and the anterior wall of ascending aorta was incised to gain exposure of the aortic valve (Figure 3A). The usual tricuspid configuration was found. However, the annulus appeared dilated to approximately twice normal, and the cusps somewhat thickened, foreshortened and stiff. The inner wall of aorta was severely involved with atheromatous change, hard in some areas, thin and fragile in others. There was no evidence of dissection from the adjacent aneurysm. The coronary arteries were cannulated (not shown in diagrams), and oxygenated blood was delivered to the heart throughout the procedure. Blood entering the left atrium was recovered by inserting a



Figure 2.—Preoperative and postoperative x-ray films of the chest. The pulmonary changes are the result of old tuberculosis.

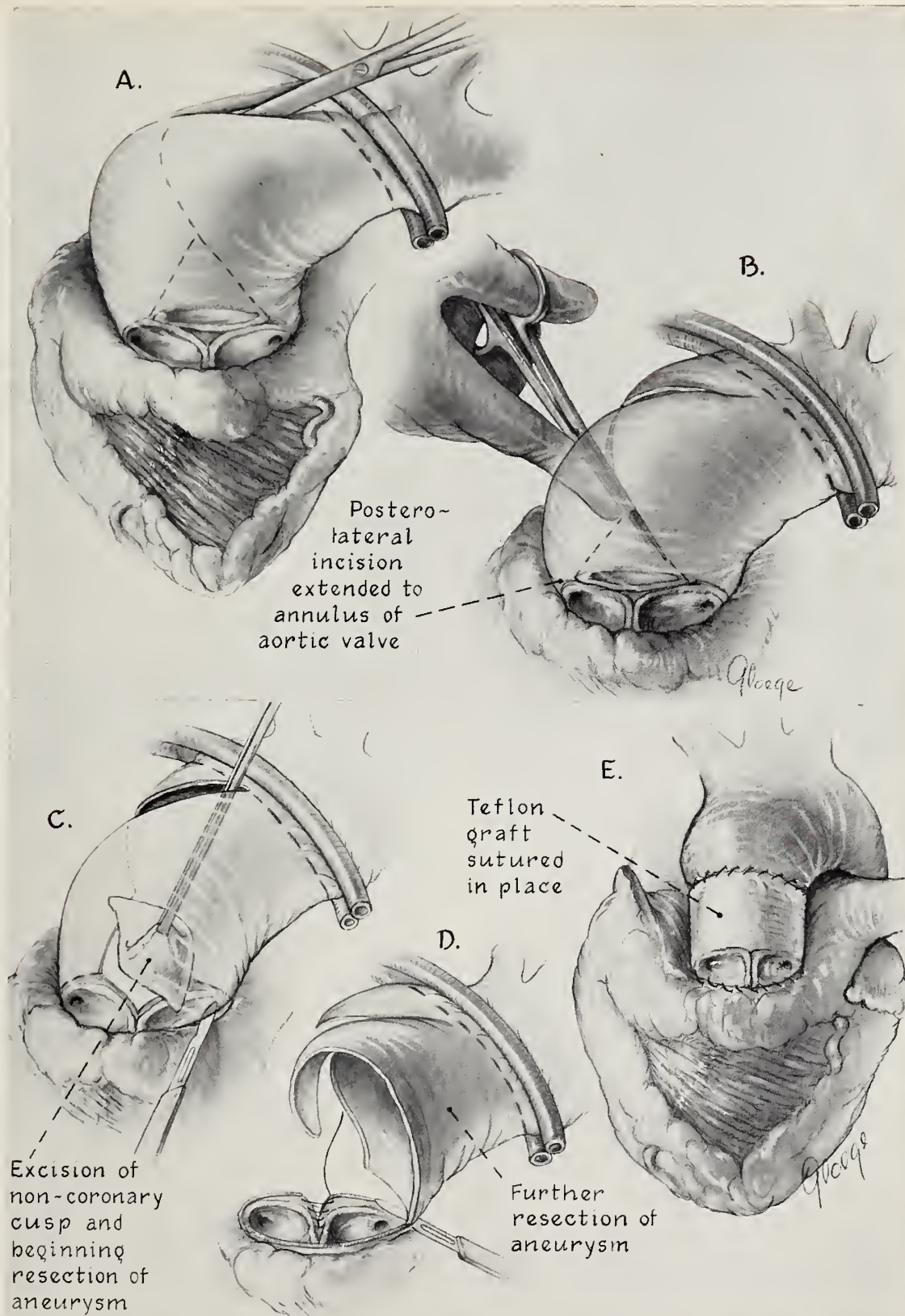


Figure 3.—A, B, C, excision of noncoronary leaflet to produce a bicuspid aortic valve; D, E, resection of involved segment of aorta and insertion of graft.



cannula through the atrial appendage to insure decompression of the left side of the heart.

The aortic incision was extended posterolaterally to the right in a spiral fashion, through the sinus of Valsalva of the noncoronary cusp (Figure 3B). An elliptical incision was then made in the posterior aortic wall to include all the noncoronary cusp except for a 3 mm cuff adjacent to the attachments of the right and left coronary cusps (Figure 3C). The posterior aspect of the aorta was then closed with 2-0 silk, with care taken to approximate the annulus with additional mattress sutures of the same material.

Bicuspidization of the valve, as originally proposed by Garamella and associates,<sup>5</sup> produced complete correction of the insufficiency previously present without significantly compromising the size of the orifice.

The segment of aorta between the innominate artery and a point just distal to the coronary ostia was excised, leaving a cuff of aorta about 2.5 cm long on the cardiac side of the innominate artery (Figure 3D). A crimped, closely-woven Teflon graft (Edwards type) 3.5 cm long was sutured in place with 3-0 silk (Figure 3E). The cannulas supplying blood to the coronary vessels were removed before insertion of the last few stitches. The combined procedures took approximately two and a quarter hours of cardiopulmonary by-pass.

Upon completion of the cardiac bypass, a blood pressure of 140/80 was maintained. Decannulation of vessels and closure of the chest was carried out.

The early postoperative course was complicated by a period of severe disorientation but the patient gradually recovered his mental faculties over a ten-day period. Throughout this time, cardiac action remained good and blood pressure continued in a normotensive range.

At a follow-up examination in January, 1962, the patient was found to be much improved in his tolerance to exercise and his feeling of general wellbeing. He continued to have some mild subjective neurologic symptoms which were not incapacitating. The blood pressure at this time was 150/88 mm of mercury. A low-intensity systolic murmur was heard in the second intercostal space at the right sternal border. A Grade I-II decrescendo diastolic murmur was also detected. However,

in view of the normal diastolic pressure these murmurs were believed to be of little significance. X-ray films of the chest showed a normal cardiac silhouette (Figure 2).

#### DISCUSSION

The development of progressive aortic insufficiency in the presence of an aneurysm of the ascending thoracic aorta has received increasing attention during the past few years because of the difficulties encountered in attempting surgical correction. The inherent problems of treating aortic valvular incompetence are further complicated by the necessity of effectively dealing with the adjacent aneurysm, since both lesions threaten life. Perfusion of the coronary system during the period of aortic cross-clamping, the use of closely-woven synthetic fabrics which will not leak while the blood is heparinized, and meticulous suturing of the aortic wall are essential features of surgical treatment. Complex problems such as those presented in the case here reported can thus be managed by combining the techniques acquired through experience with open heart operations.

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## Hyperthyroidism Masked by Psychotic Depression

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A HYPERMETABOLIC STATE and manifestations resembling those of overactivity of the autonomic nervous system are characteristic of hyperthyroidism.<sup>15,19,23</sup> These features of the disease are usually reflected in the patient's behavior by nervousness, irritability, emotional lability, and even at times by hypomania.<sup>7,9,15,23</sup> Infrequently, however, the characteristic signs and symptoms are not present. In such cases, the condition is referred to as non-active, apathetic or masked hyperthyroidism.\*

Recently, we had occasion to study a patient with masked hyperthyroidism. The case was unusual in that a psychotic depression occurred during the course of illness and may have obscured some of the usual stigmata of the hyperthyroid state. Manifestations of thyrotoxicosis appeared only after a series of electroshock treatments and resolution of the depressive state.

### REPORT OF A CASE

A 39-year-old Caucasian housewife, mother of three children, was referred to the Langley Porter Neuropsychiatric Institute on July 25, 1961, because of depression of five months' duration. A transient episode of depression had occurred once previously when the patient was 22 years old. She had felt well thereafter until the summer of 1960, when she first noticed difficulty in swallowing and found that her legs tired easily when climbing stairs. During the next six months she gradually became nervous, her appetite decreased and she lost 23 pounds in weight. At the time of a routine examination by a physician in December, the pulse rate was 120 per minute and regular, and the blood pressure was 120/80 mm of mercury. Her skin was warm and dry, and she had a fine tremor of the hands. The thyroid was enlarged, but no bruit or palpable nodules were present. The protein-bound iodine level was 25  $\mu$ gm per 100 ml (repeated), and radioactive iodine uptake by the thyroid was 97 per cent in 24 hours. An electrocardiogram showed sinus tachycardia. No abnormalities were seen in a roentgenogram of the chest. A diagnosis of hyperthyroidism was made, and methimazole, 5 mg, and phenobarbital, 15 mg, both to be given three times a day, were prescribed.

\*Reference Nos. 1, 5, 6, 8, 11, 13, 14, 17, 22, 24, 25.

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Submitted February 1, 1963.

By the middle of February 1961 the patient's pulse rate had decreased to 80 per minute. She tired easily and was unable to maintain her meticulous standards of housekeeping or take her accustomed part in church activities. Gradually she became anxious, suspicious and depressed. Therapy with radioactive iodine was planned, and the antithyroid medication was discontinued. In May the planned treatment was cancelled because of the patient's extreme tension and her fear of a radioactive agent. Her depression increased, and after the death of a close friend she began to feel worthless and guilt-ridden and to have ideas of reference. When she was next examined by her physician in June, a few weeks after discontinuing methimazole, she appeared extremely depressed. The pulse rate was 120 per minute, and blood pressure 110/80 mm of mercury. The fine tremor of the hands was still present, and the thyroid enlargement was greater than in December. The protein-bound iodine level was 4.5  $\mu$ gm per 100 ml, thyroidal radioactive iodine uptake 99 per cent at 24 hours and basal metabolic rate minus 11. On the basis of these findings, methimazole, 5 mg twice daily, was again prescribed. At her next visit approximately one month later, the thyroid gland had decreased in size, the pulse was 120, and the hand tremor had disappeared. Psychological symptoms, however, had increased to such a degree that psychiatric evaluation was considered advisable. The patient was then referred to the Acute Treatment Service of the Langley Porter Neuropsychiatric Institute.

The course of illness, correlated with the results of thyroid function studies and treatment, is shown in Figure 1.

Relevant facts in the family and past histories were as follows. The patient, the only child of middle-class parents, had been born in a small Midwestern community. Both parents had a history of thyroidectomy because of goiter; neither had experienced psychiatric difficulties at any time. The patient developed into a religious, meticulous, hard-driving person. At the age of 22, while taking postgraduate courses in another town, working to supplement her income, and directing a church youth group, she had "influenza." Because the illness persisted, she was unable to carry out her commitments, and became depressed and morose. She had six interviews with a psychologist, but because the depression continued she left school and returned to her home town. The depression subsided gradually. In her late 20's she married; she had been a competent housewife and mother until the onset of the present illness.

At the time of admission, the patient was a slen-



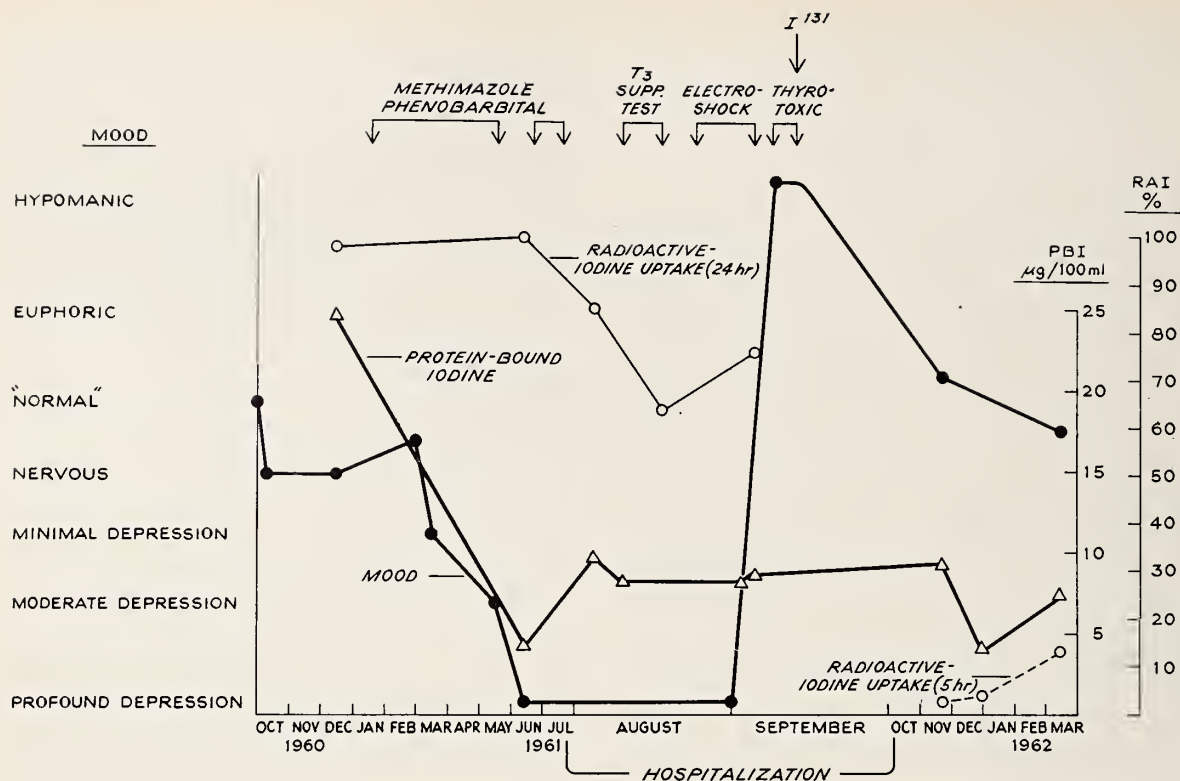


Figure 1.—Mood and thyroid function in patient with hyperthyroid state masked by psychotic depressive state. After electroshock treatments, depression cleared and clinical signs of thyrotoxicosis appeared.

der woman, 66 inches tall, weighing 120 pounds. She was sloppily dressed and slow moving, and appeared older than her stated age. Blood pressure was 118/70 mm of mercury, and pulse rate 108 per minute. Her skin was warm but not moist, and pigmentation was moderately increased. Her hair was of normal texture. The thyroid gland was diffusely enlarged; no nodules were palpable and no bruit was heard. Ocular, cardiopulmonary and neurologic examinations showed no abnormalities. No tremor of the hands was present. During the psychiatric interviews, the patient was indecisive and suspicious, and appeared excessively concerned about her children's health as well as her own. Her memory for both recent and past events was good. No evidence of hallucinations was elicited. At the time of admission she admitted having discontinued taking methimazole at least two weeks previously.

Results of complete blood cell count, sedimentation rate determination and urinalysis were within normal limits. Serologic tests for syphilis were non-reactive. The protein-bound iodine level on two determinations was 9.9 and 8.3  $\mu\text{gm}$  per 100 ml and the serum butanol-extractable iodine level 7.8 and 6.4  $\mu\text{gm}$  per 100 ml. Serum cholesterol was 207 mg per 100 ml. An electrocardiogram showed a sinus rhythm with a ventricular rate of 80 per minute.

No evidence of a substernal thyroid gland was seen in roentgenograms of the chest. X-ray films of the spine showed slight lumbosacral scoliosis, abnormal-appearing sacroiliac joints, gallstones and a stone in the left kidney. Repeated electromyograms showed some shortening of the anterior tibial muscles, but the records were interpreted as normal.

Because of the patient's lack of cooperation, the basal metabolic rate could not be determined. Results of other thyroid function studies performed at various intervals after cessation of antithyroid medication were as follows: radioactive iodine uptake (three weeks after the last dose of methimazole) was 40 per cent in one hour, 74 per cent in five hours, and 84 per cent in 24 hours. A triiodothyronine suppression test, with administration of 75 mg of triiodothyronine daily for three days and 100 mg daily for four days, was performed six weeks after the last dose of methimazole. Thyroidal uptake of radioactive iodine was 36 per cent in one hour, 64 per cent in five hours, and 63 per cent in 24 hours; uniform activity over both lobes was found by scan. Red-cell uptake of radioactive triiodothyronine (two weeks after the last dose of methimazole) was 19 per cent, and when repeated four weeks later was 23 and 20 per cent, respectively.

Chromatographic studies of the serum\* showed increased amounts of triiodothyronine and thyroxine, but no abnormal iodinated compounds were found.

During a six-day period of observation, the patient received no medications other than sedatives at night. She remained depressed and extreme psychomotor slowing was still evident. On the seventh day treatment with an antidepressant drug, tranylcypromine, was begun. During the next week the initial daily dose of 30 mg was increased to 50 mg. This dose was maintained for two and one-half weeks, and the drug then was discontinued. The clinical status of the patient remained unchanged. The pulse rate ranged from 90 to 120 per minute, resting and waking. Her weight remained stable. In the fifth week of hospitalization electroconvulsive therapy was begun. The patient was given five treatments at intervals during the next two weeks. After the second treatment, her depression began to clear. After the fifth treatment the protein-bound iodine level on two occasions was 8.5 and 8.8  $\mu\text{gm}$  per 100 ml, and radioactive iodine uptake was 42 per cent in three hours and 77 per cent in 24 hours. With the clearing of depression the patient suddenly developed clinical signs of thyrotoxicosis. She became hyperactive, and the pulse rate rose to 160 per minute. An electrocardiogram showed a sinus rhythm with a ventricular rate of 150. The patient's skin was warm and moist, and a hand tremor was present. The thyroid was enlarged; a bruit was audible. Treatment with chlorpromazine, 50 mg daily, and bztropine methanesulfonate, 2 mg daily, was ineffective in controlling the thyrotoxicosis and hyperactive state. The patient was then given a single dose of radioactive iodine, 4.2 microcuries, and during the next three weeks the hyperactivity gradually subsided. The therapeutic agents were then discontinued, and in their place chlordiazepoxide in doses up to 120 mg daily was substituted.

The patient was discharged on October 5, 1961, two and a half months after admission. She showed gradual improvement during the next five months and required fewer doses of sedatives. The protein-bound iodine level, determined one, two and five months after the patient's discharge from hospital, was 9.4, 4.4 and 7.7  $\mu\text{gm}$  per 100 ml, respectively. Radioactive iodine uptake, determined at the same intervals, was respectively 3 per cent, 4 per cent and 13 per cent in five hours. When last seen five months after discharge, the patient was well adjusted and able to perform her household duties and community activities without difficulty.

\*Chromatographic studies were carried out by a method as yet unpublished. Serum was obtained 24 and 48 hours after an oral dose of 100 microcuries of radioactive iodine and chromatographed on a Dowex 1x2 ion exchange resin, using a technique of gradient elution with increasing concentrations of acetic acid. Fractions containing iodoprotein, iodotyrosine, iodothyronine, and iodide were obtained, and radioactivity was determined.

## DISCUSSION

At the time of admission to the hospital, the patient described in this report was in severe psychotic depression. Although the history and laboratory data were suggestive of hyperthyroidism, she showed little clinical evidence of hypermetabolic state. Also, her behavior, the depression and lack of agitation, as well as the persistence of pronounced psychomotor slowing, appeared inconsistent with such a diagnosis. The behavior of a hyperthyroid person is said to depend on his underlying personality<sup>3,9</sup> and the extent of the disease.<sup>15</sup> Even the occurrence of hyperthyroidism is thought by some observers to have a psychological as well as physiological basis. Investigators have commented on the incidence of the disease in persons who, like the patient here reported upon, are overly ambitious, moralistic, insecure and dependent, and have a compulsion to serve others through work.<sup>2,10,15,16</sup> In characteristic fashion, the patient in the present case was able to handle her psychic conflicts at first by working hard at home and in church activities. When hyperthyroidism associated with fatigability prevented control of anxiety in this manner, she became depressed, and the depression gradually became psychotic in depth. Such depression has been described as "a pathological state of conscious psychic suffering and guilt, accompanied by a marked reduction in the sense of personal values and diminution of the mental, psycho-motor and even organic activity, unrelated to actual deficiency."<sup>18</sup> In the patient herein reported upon, the depressive state had almost completely obscured the underlying hyperthyroid state. Although uncommon, other cases of hyperthyroidism masquerading as psychotic depression of sufficient severity to necessitate putting the patient in hospital have been reported.<sup>3,12</sup> In these patients the symptoms of psychosis, which were variable and in some instances associated with schizophrenic manifestations, disappeared after treatment of the hyperthyroidism by thyroidectomy.

Neither the patient in the present case nor three patients described in the literature<sup>3,12</sup> had symptoms resembling those of the central and autonomic hyperactivity characteristic of hyperthyroidism. Why these manifestations do not appear in the psychically depressed hyperthyroid patient is not known. Whether the increased metabolism in hyperthyroidism affects the brain tissue is debatable.<sup>20,21</sup> A number of studies referred to by Brewster<sup>4</sup> suggests that the level of thyroid hormone influences the sensitivity to the metabolic and cardiovascular actions of the catecholamines in both man and experimental animals. In his own experiments with dogs, Brewster showed that total sympathetic blockade induced by epidural anesthesia will reverse the increase in



oxygen consumption, in heart rate and in the force of ventricular contraction produced by thyroid hormone. Infusion of either epinephrine or norepinephrine will then result in a rise in these parameters, greater than that found in similarly treated euthyroid dogs. If this is true in man, it is possible that, in the patient in the present case, central suppression of the sympathetic nervous system may have prevented the usual manifestations of autonomic hyperactivity. Lending circumstantial support to this conjecture is the patient's clinical response to electroshock therapy. After the depression subsided, the usual symptoms of hyperthyroidism then developed, including those resembling the manifestations of excessive autonomic activity.

#### SUMMARY

In a patient with hyperthyroidism described in this report, a psychotic depression was associated with a decrease in the hypermetabolic and hemodynamic manifestations of the disease. After the depression had cleared in response to electroshock treatment, the typical signs and symptoms of hyperthyroidism developed. The clinical features and course in this case suggested that the hyperactivity and increased metabolism characteristically found in hyperthyroidism may have been suppressed by the psychotic depression.

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## Lymphangioma of the Parotid Gland

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LYMPHANGIOMA of the parotid gland is an uncommon lesion. It is not mentioned in several comprehensive reviews<sup>1,2,9</sup> of parotid tumors and only occasional case reports are available.<sup>4,8,11</sup> This tumor characteristically occurs in infants and young children and is closely related to the more common lymphangioma of the neck (cystic hygroma colli) which is seen in the same age group. Owing to the rarity of primary parotid lymphangioma, the following case is presented.

#### REPORT OF A CASE

An 11-month-old white girl was admitted to San Francisco General Hospital on May 16, 1960, because of a mass over the angle of the left mandible. The tumor had been present since birth and had apparently increased in size only in proportion to the infant's somatic growth without noticeable fluctuation in its size or the development of obvious symptoms referable to its presence. Only an occasional mild infection in the upper respiratory tract was remarkable in the patient's medical history.

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Submitted March 11, 1963.

On physical examination a 6.0 x 6.0 cm soft, fluctuant, non-tender mass in the left parotid region could be faintly transilluminated. It extended from the helix of the left ear to the mid-mandible and the skin overlying it was normal.

Results of routine hemogram and urinalysis were within normal limits. Roentgen examination of the chest and left hemimandible disclosed no abnormalities.

On May 18 the tumor was excised. At operation a soft, multiloculated cystic mass was found to occupy the superficial lobe of the parotid gland. Around the peripheral aspect of the mass there were small cystic interdigitations involving the branches of the facial nerve and adjacent muscles, making excision difficult. After meticulous dissection complete removal of the tumor was accomplished and the patient was discharged on May 26 after an uneventful postoperative course. At that time there was no evidence of recurrence or of impairment of facial nerve function.

Pathologic examination disclosed two irregularly shaped pieces of lobulated, tan parotid parenchyma, measuring 5.0 x 3.0 x 1.5 cm and 4.0 x 3.0 x 2.0 cm, which contained smooth, translucent, partially collapsed multicystic structures of varying size. Microscopic examination showed normal lobules of parotid gland, within and between which were numerous lymphangiectatic spaces containing homogeneous, brightly eosinophilic material with enmeshed lymphocytes (Figure 1). These intercommunicating spaces were lined with a single layer of flattened endothelium with underlying walls which varied in thickness depending on the amount of fibrous tissue and smooth muscle fibers present. Focal aggregates of lymphocytes were noted in the walls of some of the vascular channels. There was no evidence of inflammation. The pathologic diagnosis was lymphangioma (cystic hygroma) of the parotid gland.

#### DISCUSSION

Cystic lymphangioma is a tumor composed of variable numbers of large lymphatic spaces. In the great majority of cases they occur in the neck, where they are thought to represent a developmental abnormality rather than a true neoplasm. Such lesions characteristically make their appearance in the first five years and are occasionally noted at birth. They are thought to represent sequestered remnants of the cervical lymphatic system which have retained the power of inherent growth.<sup>10</sup> Although the most common neoplasm of the parotid gland in infancy and early childhood, also of vascular origin, is the infantile hemangioendothelioma,<sup>2,6,7</sup> it is not unlikely that occasionally seques-

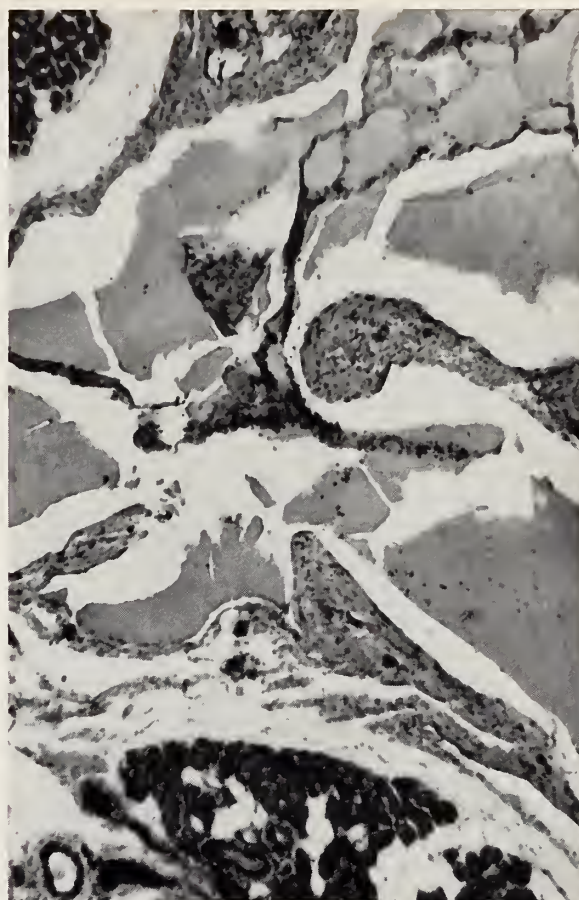


Figure 1.—Section of excised tumor showing dilated, intercommunicating lymphatic spaces within the parotid gland ( $\times 125$ ).

tered intraparotid lymphatic anlagen occur and give rise to lymphangioma.

Grossly, these tumors are usually multiloculated and are composed of cystic spaces of varying size. The smaller cysts have delicate, thin walls and are often transparent; the larger ones may show thickening of the walls. These ectatic lymphatic channels contain clear, serous lymph. There is a pronounced tendency on the part of these tumors to penetrate the adjacent tissues by means of peripherally developing small endothelial spaces.<sup>5</sup> Microscopically the cysts are seen to be made up of randomly arranged intercommunicating and dilated lymphatic channels with a flattened endothelium lining walls of varying thickness, the variation depending on how old the lesion is and the degree of associated fibromuscular tissue. Aggregates of lymphocytes are frequently noted in the cyst walls or in the interlacing areolar tissue.

Clinically, this lesion is a soft, non-tender, fluctuant mass which may be transilluminated. There is usually a slow increase in size but occasionally



rapid enlargement follows an upper respiratory tract infection, indicative of obstruction of normal lymphatic channels which may communicate with the tumor.<sup>8</sup> Material aspirated under sterile conditions will usually show a typical sediment composed of lymphocytes with an absence of blood and epithelial tissue.<sup>8</sup> In the past these lesions have been treated by repeated aspiration, injection of sclerosing agents and radiation, but it is now generally agreed that the treatment of choice is surgical excision,<sup>3,8</sup> although irradiation or radon seed implantation may be used in recurrences or in conjunction with surgically difficult cases.<sup>3</sup>

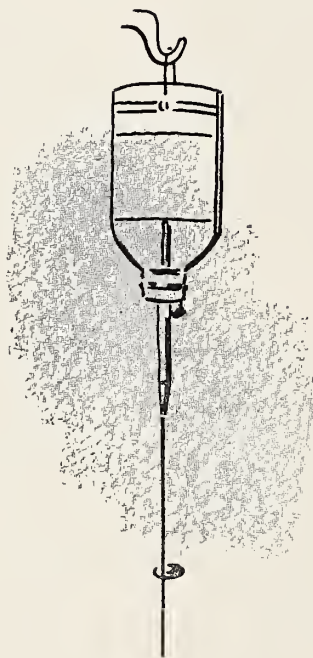
#### SUMMARY

A case of cystic lymphangioma (cystic hygroma) of the parotid gland is presented. These tumors and the closely allied cystic lymphangiomias of the neck apparently arise from sequestered anlagen of the cervical lymphatic system. The characteristic clinicopathologic picture consists of a multiloculated cystic tumor composed of dilated lymphatic spaces presenting as a soft, non-tender, fluctuant mass in infancy and early childhood. Treatment of these tumors is surgical excision whenever feasible.

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# The Addiction Potential of Oxycodone (Percodan®)

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DIHYDROHYDROXYCODEINONE (OXYCODONE) was introduced into medical use some 40 years ago. It has proved to be a useful analgesic. It has also demonstrated an addiction potential comparable to that of morphine.<sup>1</sup> The manufacturers of Percodan®, the principal United States product containing oxycodone, recognized this during the early phases of its commercial distribution and in the initial literature supplied with the drug warned:

"The habit-forming potentialities of Percodan approach those of morphine more closely than those of codeine. The same care should therefore be exercised when using Percodan as when morphine is prescribed."

Later this warning was deleted from the detail literature and the minimum warning required by law, "may be habit-forming," was substituted. This was unfortunate, for as oxycodone production has increased in this country (from 9 kilograms in 1948-1950 to 569 kilograms in 1960<sup>2</sup>) and as it continues to rise, there is evidence that the original warning has been forgotten by many who prescribe or sell this drug for the relief of pain. As a result an increased misuse of oxycodone-containing drugs has caused the addiction of numerous persons normally not associated with the illicit drug traffic. And the drug has acquired the unenviable status of being the principal choice as a substitute for heroin by California-based heroin addicts.

The misuse of Percodan, Percodan-demi, Percobarb and Percobarb-demi has precipitated a four-fold problem in California.

1. Oxycodone-containing drugs are being prescribed in increasing amounts for a variety of illnesses. Their consumption in this state has increased out of proportion with the rest of the country. In 1962, 35,951,020 units of these drugs were purchased by California pharmacies, hospitals and physicians. A blasé attitude has seemingly developed among some that has resulted in a situation described by John E. Storer, Chief of California's Bureau of Narcotic Enforcement: "People are eating

• Dihydrohydroxycodeinone (oxycodone, Percodan®) is a useful analgesic. Its addiction potential, however, is comparable to that of morphine. This fact should be considered when it is prescribed. Because of increasing numbers of addicts to this drug in the State of California, the California Medical Association Committee on Dangerous Drugs and the House of Delegates has recommended that oxycodone-containing drugs be returned to the triplicate prescription list as they were originally in 1949. This recommendation was incorporated in Senate Bill 385, which failed to pass the legislature.

Percodan as though it were popcorn, with extremely telling effects."

2. Numerous non-criminal persons without previous history of addiction or of association with illicit narcotics are becoming addicted to the drug and are committing criminal offenses to obtain it.

3. The underworld addicted population is apparently seeking this product to support or supplement its habit. Thousands of tablets are being diverted into illegal channels. And crime associated with this activity has increased. California is faced for the first time in its history with the problem of underworld sources actively seeking an otherwise licit narcotic as a substitute for heroin. Addicts have discovered that oxycodone can control withdrawal symptoms and produce heroin-like effects when taken either orally or intravenously. Additionally, it may mask the presence of heroin addiction if the drug is taken orally for a week or two before an addict's scheduled appearance in court. Homatropin, an ingredient in Percodan, masks the ocular signs usually seen with opiate addiction and may confuse Nalline testing. The oral use of the drug gives time for needle marks to heal and thus not be valid as evidence of recent intravenous use of a drug.

4. Ingredients in Percodan (oxycodone has been combined with aspirin, phenacetin and homatropin) may cause toxic side effects because of the ingestion of large quantities of these drugs by persons taking the mixtures to obtain the effects of oxycodone. The dependence caused by oxycodone is apparently strong enough that an addict will ignore skin rashes, gastrointestinal bleeding and compa-

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Submitted for publication by William F. Quinn, M.D., chairman of the Committee on Dangerous Drugs, California Medical Association.



rable symptoms which result from the gross misuse of Percodan and comparable compounds until he is forced to obtain emergency medical treatment. Patients with gastrointestinal diseases such as colitis and gastric or duodenal ulcer and patients who have glaucoma are poor candidates for prescription of this drug unless extreme caution is exercised. Yet, there are numerous cases on file at the Attorney General's office which indicate that addiction began as the result of using Percodan for pain associated with gastrointestinal disease.

The average physician and hospital staffs see few cases of Percodan addiction because of the careful monitoring of narcotic drugs in private offices and institutions. This can be expected to change, however, if current impressions concerning the addiction potential of oxycodone remain uncorrected. Percodan addiction is well known to personnel of state hospitals, for it is here that oxycodone addicts appear—addicts whose addiction is primarily ascribable to the illicit use of the drug by persons who, for the most part, were introduced to it by prescription for a legitimate illness.

Since the average physician may not as yet be aware of the hazards of the misuse of oxycodone products and because recent legislative activities may have augmented the misconception that oxycodone is of little addictive importance, it seems wise to review certain evidence which has been placed before the California Medical Association's Committee on Dangerous Drugs within the past few months.

Originally and as late as 1949 Percodan was controlled by triplicate prescription. Two years later, because it had caused little or no enforcement problem, Section 11166.12 of the California Health and Safety Code was amended to permit prescription of the drug on a plain blank. In 1953 another amendment permitted telephoned orders without accompanying written prescriptions.

Violations of Section 11166.12 involving Percodan became noticeable with the passing of the 1953 amendment and caused the Bureau of Narcotic Enforcement to begin agitation for the return of the drug to the triplicate form. The Federal Bureau of Narcotics investigated the situation during this period but refrained from interfering on a Federal level inasmuch as the problem seemed confined to California.

On October 5, 1961, Attorney General Stanley Mosk openly cited the need for increased control of Percodan, stressing that the drug was creating a new class of addicts composed of otherwise honest, not criminally inclined persons. The problem was brought before the California Medical Association Committee on Dangerous Drugs. The evidence was reviewed. The personal experience of the members

of the committee and a lack of evidence sufficient to warrant the return of the drug to triplicate blank at that time caused the Committee to refrain from making a formal recommendation concerning Percodan.

The Committee did, however, suggest a continued period of observation and expressed interest in following the problem inasmuch as the arrest record for Percodan violations for the first nine months of 1961 was 50 per cent higher than violations involving all other licit narcotics combined.

The addiction history of oxycodone was also noted. In 1954, the *Bulletin on Narcotics* stated that oxycodone then accounted for 11.5 per cent of narcotics misused by addicts in France. "This high percentage of dihydrohydroxycodone should be emphasized," *Bulletin* author Charles Vaille warned. "This substance, which began to be used in France only a few years ago, has proved to be particularly dangerous with regard to drug addiction. It seems to act more like heroin than like morphine."<sup>4</sup>

Later, Dr. Nathan B. Eddy, an eminent authority, added to this observation: "Oxycodone has an analgesic potency approximately the same as that of morphine, with a usual dose of 10 mg, and a similar duration of action. The incidence of most side effects appears to be less for oxycodone than for morphine, but its respiratory depressant effect and its addiction liability are not materially different from these effects of morphine. Either of these effects should preclude its use as an antitussive."<sup>2</sup> Dr. Eddy re-affirmed this opinion on February 13, 1963, in a personal communication to Dr. William F. Quinn, chairman, California Medical Association Committee on Dangerous Drugs as follows:

"Your letter indicates that use of the triplicate prescription forms has decreased diversion of opiates from legitimate channels to abuse. If this is so and if codeine is subject to prescription on the triplicate form, it would be my opinion that making Percodan subject to the use of such forms could be justified and could help to prevent diversion of Percodan to improper use."

When the California Bureau of Narcotic Enforcement approached the C.M.A. Committee on Narcotics again in 1963 its evidence was more voluminous and more impressive. It was shown, for example, that a five-week spot check, begun on February 6, 1963, of 174 pharmacies in Los Angeles and San Francisco, had revealed 946 forged prescriptions in the files of unsuspecting pharmacists. The names of 240 physicians had been forged on these blanks, which had been stolen from various offices. This spot check represented a survey of but 4 per cent of California's 4,300 pharmacies.

Additionally, numerous cases in which Percodan was implicated in violations of Section 11166.12 of

the State's Health and Safety Code were presented. Some of these are included here in brief summary. Each case represents a specific problem. All cases are from the Los Angeles office of the Bureau of Narcotic Enforcement. In each case, the subject was apprehended because he had forged prescriptions to obtain Percodan for illicit use.

CASE 1. Male pharmacist. Age 52.

Subject placed forged prescriptions in his files to cover his personal misuse of Percodan. His wife and daughter were also involved. He sought assistance from the Bureau after being forced to commit his daughter to a sanatorium for addiction. Some 5,000 tablets had been used by the family by that time.

This man was a community leader, an outstanding lecturer to civic clubs on the subject of the evils of narcotics. He had represented his profession before the California State Legislature.

CASE 2. Male pharmacist. Age 75.

Subject illegally supplied an addict with Percodan for two years without legitimate prescription. A physician, learning of the addict's plight, attempted unsuccessful ambulatory withdrawal. The addict collapsed at his place of employment, was discovered to be addicted, and later helped in the apprehension of the pharmacist.

CASE 3. Male physician. Age 35.

Subject used Percodan for two years with a current habit of 50 tablets daily. He stated he was originally unaware of the addicting potential of the drug. He failed repeated attempts to cure himself. Eventually he underwent psychotherapy.

CASE 4. Male physician. Age 85.

Subject wrote over 700 prescriptions for Percodan in a 16-month period without verifying patients' illnesses or identity. Unwittingly he became a source of supply for heroin addicts. The physician claimed he was misled by advertisements which merely noted the drug was "habit forming" and thus felt free to prescribe without caution.

CASE 5. Male minister of the gospel. Age 54.

Subject was apprehended with numerous stolen prescription blanks. He forged these for personal use of Percodan. Ironically, when apprehended, he was found to have used the back of some of these blanks as a scratch pad for his next sermon, "He Was Weighed and Found Wanting."

CASE 6. Male school teacher. Age 33.

Subject was apprehended forging prescriptions during a period when he was undergoing psycho-

therapy. He said he knew he was "hooked" after his intake had reached 7 to 8 tablets daily.

CASE 7. Male restaurant owner. Age 49.

Subject sent his employees to fill prescriptions he had forged. He began his habit in New York where, according to the subject, the drug is easily obtained. Initially his physician provided him with a prescription for 400 tablets.

CASE 8. Housewife. Age 21.

Subject began using Percodan as a high school sophomore, obtaining her drugs from a friend for the relief of menstrual cramps. Addicted by her senior year, she obtained her drugs by going from physician to physician. When her baby was born she went through three days of withdrawal symptoms. At that time she consulted a psychiatrist, who continued to supply her with 30 tablets of Percodan daily while attempting psychotherapy. In time her family physician interrupted the cycle by placing her in a sanatorium for withdrawal therapy.

In connection with this case, it is well to note that a segment of the medical profession suggests that proper therapy of addiction involves the continued legal use of drugs until the "addict is ready to quit." A question that can reasonably be asked is: If a drug supplies all the answers to each of an addict's problems (which the addict feels it does), how can one reasonably expect he will ever voluntarily give up his drug as long as it is easily acquired? And as long as the drug is available, why should an addict seek or accept another method of solving his problems, particularly if this route involves the emotionally painful experience of maturing.

CASE 9. Housewife. Age 28.

Subject used 20 or more tablets of Percodan daily until a generalized rash developed. Scars from this rash are still visible after two years of abstinence. The patient had severe withdrawal symptoms and hallucinations when she tried to quit her habit. In desperation she walked into a police station, dumped her supply of Percodan on the desk and pleaded for assistance.

CASES 10, 11, 12. A family, the father a mechanic, age 48; the mother a housewife, age 47; and the son, a student, age 15.

The father of this family forged stolen prescription blanks after becoming addicted through the use of his wife's supply which she obtained from her physician for treatment of pain associated with colitis. He also telephoned various pharmacies, impersonated physicians, and thus obtained drugs illegally.

"I took Percodan which was prescribed for my



wife," he told investigators. "It seemed to give me a quick lift mentally as well as physically. I liked them immediately and have been taking them for approximately a year."

This case came to attention when agents apprehended the 15-year-old son as he tried to pass forged prescriptions. The boy himself was using 10 tablets a day at the time. He had stolen prescription blanks from physicians' offices, forged them and then passed them with minimal difficulty.

#### CASE 13. Male laborer. Age 24.

Subject was a heroin addict who used Percodan by preference because of its low cost, easy availability and the relative lack of danger of being in conflict with the police.

The use of Percodan by heroin addicts presents some interesting sidelights on techniques. Whereas most addicts whose primary addiction is to Percodan ingest the drug, heroin users if they have turned to Percodan "for kicks," may inject it intravenously. If they do, they employ the usual stock items—a spoon for boiling the drug into solution, a needle, an eye-dropper and a cotton pledget for straining the solution before injection. But, for Percodan, they add a technique not normally employed when heroin is used. They chew the cotton after they have "enjoyed" the effects of the intravenous injection in order to extract the last available drop of drug.

It may seem odd that California has become the center of Percodan misuse. Two factors, however, may contribute to this: California has an undue share of unstable personalities who welcome bizarre methods of escaping reality; and it is one of two states—the other being Illinois—where the triplicate system of prescribing narcotics is in effect.

In states where an addict can forge any narcotic on a plain blank, he preferentially would and does choose morphine, dilaudid or a comparable drug. When the triplicate system is present, however, he must make a second choice. In California Percodan is the only addict-preferred drug not currently on the triplicate system.

A question is frequently posed which implies that if codeine-containing drugs are exempt from the triplicate system, oxycodone-containing drugs should also be exempt. The best reply to this implication is that when and if codeine-containing drugs present an enforcement problem, a request will be made to place them on triplicate prescription. Until then, it seems unnecessary to burden practicing physicians with an additional task.

The argument has been presented that the placement of oxycodone-containing drugs on the triplicate list will limit their usefulness and prevent their acquisition by persons who require them for legitimate purposes. This should not be true for these drugs

any more than it has proved true for other narcotics. Over 22,000 triplicate slips are written by California's physicians each month to provide adequate narcotics for those who need them. Interestingly, some physicians still seem to prefer the triplicate blank for Percodan even though it is not currently a legal requirement.

The problem of replacing Percodan on the triplicate list has precipitated many discussions. Certainly, there is room for debate on both sides of the question. When the subject was considered by the C.M.A. Committee on Narcotic Drugs earlier this year, however, the evidence seemed far too weighted on the side of public health and safety to permit the continued misuse of oxycodone-containing drugs if this misuse could be controlled by the expedient of employing the triplicate system.

The Committee felt it could not ignore the mounting evidence concerning the need for stricter controls for this drug. As a result, it recommended that oxycodone-containing drugs be replaced on the triplicate list, observed for a two-year period and then reconsidered. It was joined by the California Pharmacy Association in this recommendation.

On January 21, 1963, at the specific request of the Governor and the Attorney General and with the approval of the California Medical Association, Senator Edwin J. Regan introduced Senate Bill 385, which would have put oxycodone-containing drugs back on the triplicate list. A marathon of discussion then began among legislators. It continued on and off over a period of five months. Essentially the argument seemed to evolve itself into an issue of conservative management of a dangerous drug on one hand and matters of convenience, politics and finance on the other.

The bill passed the Senate but on May 15, 1963, by a vote of six to four, Senate Bill No. 385 was killed in the Assembly Criminal Procedure Committee.

**ACKNOWLEDGMENT:** The author wishes to express his appreciation to Mr. Burnell H. Blanchard, Field Supervisor, Medico-Legal Drug Section, Bureau of Narcotic Enforcement, State of California, for his assistance in the preparation of this manuscript.

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# California MEDICINE

For information on preparation of manuscript, see advertising page 2

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## EDITORIAL

### The Non-Member

WHAT DOES A MEDICAL SOCIETY do when a complaint is received from a citizen against a physician who is not a member of the society?

This question has long plagued medical societies in California and other states. The society has no jurisdiction over the physician in question. It has no legal or ethical right to make an order and be able to enforce it. It has no right to impose the Principles of Medical Ethics against a physician who, by reason of non-membership, has not embraced those principles and agreed to follow them.

Medical societies are established along geographical lines, generally within the borders of a county or a combination of two or more counties. They offer membership to all physicians who qualify by training, licensure and professional and ethical standards as eligible for membership. They remain strictly voluntary in nature and don't ordinarily set out to entice physicians into membership.

At the same time, medical societies (in California at least) have long followed the precept that a patient with a real or fancied grievance should be given a forum for the airing of his complaint. Today we expect to find a grievance or public service committee active in all component medical societies. And we expect these committees to act fairly in the consideration of claims made by patients. This is the one mechanism through which a medical society may review the circumstances of a situation where a misunderstanding between physician and patient may be explored and compromised. These committees serve the public and the profession very well.

To date the non-member physician has been outside the scope of this process. He has been able to remain apart in the knowledge that so long as he does not break the law he need not be governed by the code of ethics which physicians in organized medicine have embraced for the purpose of protect-

ing the patient and preserving the best climate for the honest practice of medicine.

Last month a break in this train of responsibility was recognized by the executives of the component societies which comprise the great majority of society members in California. The Medical Executives Conference, made up of C.M.A. staff members and the full-time executives of a number of component societies, proposed that attention be paid to the non-member.

The conference proposed (1) that the component societies, under competent legal advice, proceed to act on complaints brought against non-member physicians; (2) that under special circumstances the component society may ask the C.M.A. to assume jurisdiction, and (3) that a study be made on means by which the public can distinguish between member and non-member physicians in each society's area.

The Council of the C.M.A. withheld action on the first two recommendations pending a report on this subject already under way by a standing commission, but approved the third item and asked the Medical Executives Conference to proceed on such a study. With an eye on the composition of this conference, we may expect prompt results from this study.

Good behavior by physicians is prompted but not guaranteed by several factors. The training of physicians gives them all an adequate indoctrination in this area. State laws proscribe certain practices. The Principles of Medical Ethics draw broad guidelines aimed at assuring that all physicians work within a framework of original responsibility to the patient and that fair and honest dealings be the rule of the day between physician and patient.

The physician who joins a component society agrees to follow the precepts set down by his peers. If he deviates, he subjects himself to the disciplinary proceedings set up in the constitution and bylaws of his society. We do not imply, of course, that all or



any substantial number of non-members are in any way miscreant, but since non-members are not beholden to these precepts, they may more easily depart from them.

If the latter pattern is followed, moral suasion is the sole remaining weapon of the professional society. While it may not be effective in all cases, it has a reasonable chance of succeeding. The physician who knows that other physicians are looking over his shoulder is likely to listen to conscience with a keener ear.

The proposal of the Medical Executives Conference, which would give a patient with a grievance a place where he can find out whether or not, in the opinion of ethical practitioners, he has been competently treated and fairly dealt with is a move in the public interest.

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### Obiter Dicta

FROM TIME TO TIME a judge on the bench will deliver a message along with his judgment. Such messages are referred to legally as *obiter dicta*, freely translated as "spoken from above." They do not constitute a part of the judicial ruling but do point to the philosophy of the court in reaching its decision.

This happened in Kern County last month, when a superior court judge went out of his way to comment favorably on the *Guiding Principles for Physician-Hospital Relationships* that were developed by the California Medical Association and the California Hospital Association. At the same time he complimented six physicians for their devotion to duty in carrying out the terms of these principles.

The case was brought by a surgeon whose surgical privileges in a hospital had been curtailed to require that he seek consultation on any operations he proposed to perform. He sued for a writ of mandate to abolish this requirement. A jury sat in the case in an advisory capacity only, final judgment resting with the judge.

Instructions to the jury were simply to bring in a yes or no answer to the question: Did the executive committee of the hospital staff act in accordance with the hospital staff's bylaws in issuing the order to require preoperative consultation? An affirmative vote was reached unanimously in 48 minutes.

The judge then denied the requested writ of mandate and in so doing referred to the *Guiding Principles* as being a part of the hospital medical staff bylaws. He also quoted one statement from these principles: "Quality of medical care patients receive has been shown to be affected by the cooperation, understanding and morale existing among the phy-

sicians and administrative staff of a hospital, and requires wise leadership of the governing body." This "wise leadership," the judge said, was evidenced by the testimony presented in the case.

The six members of the hospital staff's executive committee were also complimented by the judge for "their devotion to the ideals of medicine and the unselfish giving of their time . . ."

The *Guiding Principles*, which have been embraced by a majority of the hospitals in the state, were devised to promote just such an atmosphere as the judge noted. This instance of *obiter dicta* has impressively proved their value.

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### The Revised "Cancer Studies"

THIS ISSUE OF CALIFORNIA MEDICINE contains two chapters of the completely revised third edition of "Cancer Studies."

In 1936 the Cancer Commission, whose chairman then was Dr. Charles Dukes, first published a résumé of the existing status of the cancer problem, with Dr. Emile Holman as editor. The first work of its type to be produced by a state medical society, it was followed by similar studies in other states. A revision was made in 1949 when Dr. Lyell Kinney was chairman, with Dr. Leonard Dobson as editor. It has had wide distribution, demonstrating the long and effective leadership of the California Medical Association in cancer control—not only in California but throughout the country. The purpose of each edition was to present in a single volume a convenient desk reference which would make readily available to each physician the current status of the diagnosis and treatment of the various major sites of cancer. These volumes are not intended to be technical nor detailed but are designed to present information to the busy physician in a concise and useful manner.

The new volume was prepared only after serious deliberation by the Commission on Cancer and its Committee on Cancer Education. Examination of the literature showed a need for a newly revised third edition. While there existed excellent encyclopedias and innumerable pamphlets and reprints, a portable desk reference was not in existence.

Two years ago, the Cancer Commission received authorization from the Council of the California Medical Association to proceed with this revision. The Committee on Cancer Education, composed of Drs. Paul Deeb, Werner Duemling, Byron Hall, Robert Jamplis, Justin Stein, David Wood, with Dr. Sol Baker as chairman, began the difficult but important task of selecting the subjects and obtaining the manuscripts. The list of chapters reflects the

great volume of new information developed and the changes in emphasis which have occurred in the past fifteen years. Thirty-nine chapters will make up the completed volume. Most of these will be published in CALIFORNIA MEDICINE as they are completed. The authors are members of the California Medical Association selected for their leadership in their fields and for their ability to present their material to their colleagues in a clear and concise form.

The third edition will be distributed free to all licensed California physicians, to senior medical students and to other new California physicians as they are licensed. It will be sent to medical libraries throughout the world and will be sold to other physicians who may desire a copy. Publication has been made possible in part through support from the American Cancer Society, California Division.

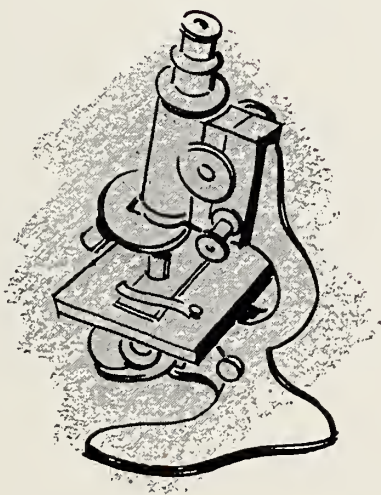
BURT L. DAVIS, M.D., *Chairman  
Commission on Cancer*

## The New Dean

WE HAVE OFTEN THOUGHT that there is particular honor in being chosen from among one's fellows for a position of leadership, as the selection implies a testament of high regard by the persons whose esteem is most to be treasured—those who know us best.

Just such a tribute recently came to Dr. William O. Reinhardt when he was appointed dean of the University of California School of Medicine, San Francisco (see page 143). Long a member of the teaching staff there, Dr. Reinhardt was for years under the unselfconscious scrutiny not only of those who later were empowered to select him but also of the fellow members of the faculty he now will serve as dean. His appointment was a tribal one, and it must be doubly pleasing to him on that account.

We welcome Dr. Reinhardt to his new position, we wish him well and we fully expect the wish to be fulfilled.





# California MEDICAL ASSOCIATION

## NOTICES & REPORTS

### Physician Fee Index Survey

*Report of the Bureau of Research and Planning, California Medical Association*

A PHYSICIAN FEE INDEX recently calculated for the three-month period ended on December 31, 1962, shows that physicians' fees in California have risen approximately 1 per cent since the quarter ended September 30 of that year. The six-month span since the Index was begun has evidenced an over-all increase of 1.65 per cent, with the April 1-June 30 quarter serving as the base period. The earlier increment from June to September was slightly over six-tenths of 1 per cent.

Fees for *medical* procedures, including office, hospital, and home visits, consultations, and electrocardiogram with interpretation and report (diagnostic) advanced slightly more rapidly than did the Index for the total of 28 procedures surveyed. The six-month increase amounted to 1.75 per cent. The comparable change in fees for 15 relatively common *surgical* procedures was 1.63 per cent. These procedures range in degree of difficulty from the removal of a foreign body from the surface of the cornea to a cholecystectomy.

Within the field of *Radiology*, the five x-ray diagnostic procedures surveyed show an average increase of 1.54 per cent from June to December. Fee changes for two *laboratory* procedures are measured (complete blood count and routine urinalysis); these averaged an increase of 0.65 per cent during the six-month period.

The survey questionnaire requested fee information for two procedures in addition to the 28 included in the Index. These data were used for purposes other than estimating the degree of change taking place in physicians' fees; hence, they are not reflected in this report.

These data were secured from a continuing study being conducted by the Bureau of Research and Planning of the California Medical Association. A mail questionnaire elicits information from a group of almost 500 randomly selected physicians as to

their "usual and customary" fees for 28 medical, surgical, radiological, and laboratory procedures. Each procedure is weighted according to the frequency of its performance within the State, based upon relative occurrences within a sample of one million claim forms. Hence, slight changes in the average charge for a routine office visit would have a substantially greater effect on the Index than would a similar dollar or per cent change in the charge for an appendectomy. The weighting system considers the cost of the procedure in addition to its frequency of occurrence. The total Index, then, represents the change in the costs of a "total package" of physicians' services.

Each physician respondent is requested to enter his usual and customary fee for any of the listed procedures which he may have performed during the three-month period prior to each quarterly survey date. Definitions of the procedures included in the questionnaire appear in the 1960 edition of the *Relative Value Studies* published by the California Medical Association. Included in the index computations are only those fees for procedures which an individual respondent has performed within two successive periods. This method helps to insure comparability of data over the elapsed time period and also serves to exclude fees charged by physicians for procedures they perform only in rare instances.

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The Index is calculated on the basis of weighted mean figures. The average fee for each procedure is multiplied by its relative frequency of performance. The weighted averages for the 28 procedures are totaled, with comparisons between survey periods forming the Index. Only two successive periods are used to compute any index figure because the natural attrition of respondents over time can cause meaningless changes in average fees. Hence, every figure from every physician included in computations for the December Index has a September counterpart. The September Index, as will be the case in future indices, was likewise formed using this method with June as its counterpart.

Both specialists and general practitioners are included in the sample. Although the individual price charged for a particular procedure performed by a specialist may be somewhat higher than that charged by a general practitioner (among the 28 procedures the mean fee charged by the specialist is 19 per cent higher than that of the general practitioner), the rate of change within the two groups is virtually identical. Within the sample of 492 physicians who have continued to respond through the December survey period, there are 116 general practitioners and 376 full- and part-time specialists; GPs are slightly under-represented, since they account for approximately 32 per cent of all physicians in private practice and slightly under 24 per cent of the sample. In 13 of the procedures, however, at least half of all responses were from GPs, since each GP is able to enter fees for a large number of procedures, whereas the pathologist, for example, can enter fee data for only two procedures. However, since the rates of change in fees between specialists

and GPs are similar, the slight disproportion in response rate is of negligible importance.

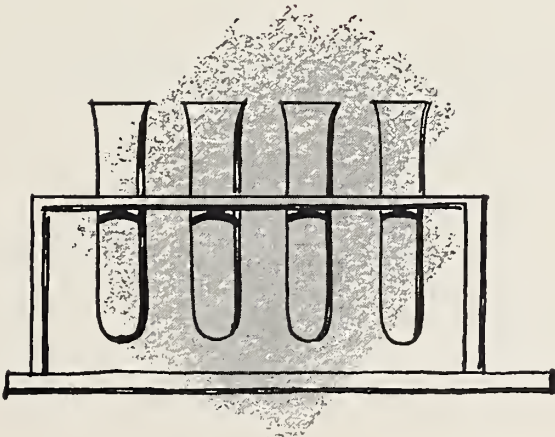
It is of interest that during this same six-month period the physician fee segment of the Consumer Price Index published by the Bureau of Labor Statistics of the United States Department of Labor showed an increase of 1.07 per cent nationally. The BLS Index surveys five procedures (office and home visit, tonsillectomy, appendectomy, and obstetrical care) rather than the 28 included in the Bureau of Research and Planning Index. Using the quarter ended June 30, 1962, as the base period, the comparable figures are as indicated in the following table.

	1. Physician Fee Index Component* Bureau of Labor Statistics (5 items)	2. Physician Fee Index Bureau of Research and Planning (28 items)	3. Physician Fee Index Bureau of Research and Planning (5 items)
Pricing Period			
June, 1962 .....	100.00	100.00	100.00
September, 1962 ....	100.45	100.61	100.63
December, 1962 ....	101.07	101.65	101.54

\* A component of the Consumer Price Index.

Columns 1 and 3 in the table may best be compared since the medical procedures included are identical. The data appear to indicate that, over the six months, fees rose more rapidly in California than in the total United States. The continuing study is expected to provide additional insight as to what differentials, if any, exist over longer periods of time.

California Medical Association, 693 Sutter Street, San Francisco, Calif. 94102.





# CALIFORNIA MEDICAL ASSOCIATION

## *1964 annual scientific assembly*

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Do YOU HAVE A PAPER you'd like to present to your colleagues? . . .  
Write to the appropriate Section Secretary . . . Don't delay . . . Do it  
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CMA Committee on Scientific Assemblies, 693 Sutter Street, San Fran-  
cisco 2, for *application forms* for Medical Motion Pictures. *Don't wait!*  
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## A Fifty-Fifty Chance

BECAUSE WE HAVE no definite diagnostic test for early alcoholism, many victims become long-time addicts before seeking help. Even so, with employer cooperation, modern methods of treatment can return perhaps half of such persons to habitual sobriety; although it cannot, of course, reverse all physiological changes that may be associated with prolonged alcohol consumption.

A physician's effort to give this fifty-fifty chance to those who need it must be two-fold. First, he must learn the known characteristics of alcohol poisoning, of alcoholics and of available treatment so that he may counsel the employer, the employee and the employee's family. Such information is readily available.\*

Next, the physician must persuade the employer to cooperate in the early discovery of alcoholism and then to provide a "crisis" which may help an afflicted employee to understand that life without alcohol may, after all, be preferable to life with it.

In industry, the immediate supervisor holds the key to early diagnosis, since it is he who may first notice the drop in work quantity and quality, the pattern of absenteeism and excuses, the alcoholic breath, and, often, the personality change following a lunch hour used for refortification with alcohol.

The moment a supervisor suspects alcoholism, he should confer with the company physician. He may be reluctant to do this unless he is made to understand that such a conference will help his employee more than if he covers for him. A clear-cut company policy on alcoholism can give the supervisor reassurance in this matter.

Company policy should include: (1) A clear and publicized statement recognizing alcoholism as a health problem which requires treatment; (2) An offer of assistance in getting the patient under proper treatment; and (3) A firm statement that the employee will be discharged from his job if no progress has been made after a reasonable time.

While the threat of job loss is critical to the success of the program because it provides the pressure needed to persuade the employee to seek help, both company policy and physician should stress the offer of assistance and the fact that help is available.

Since over 3 per cent of industrial workers are believed to suffer from alcohol addiction, efforts along these lines can be highly rewarding to a physician as well as to the industry.

COMMITTEE ON OCCUPATIONAL HEALTH  
CALIFORNIA MEDICAL ASSOCIATION

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\* Among good sources of information:

- A film—excellent for management groups—is one titled "For Those Who Drink" by R. G. Bell. Available for purchase or rent through L. L. Cromien & Co., 229 Yonge Street, Toronto, Ontario, Canada.
- For general information:  
"New Primer on Alcoholism" by Marty Mann (Holt, Rinehart, and Winston). Price \$2.95.  
"Alcoholism in Industry," a pamphlet by the Christopher D. Smithers Foundation, Inc., New York.
- For names of specialists, clinics, and Information Centers on Alcoholism in your area, write the National Council on Alcoholism, 2 East 103rd Street, New York, N. Y. 10029.



## In Memoriam

BIVENS, PARRY EUGENE, Los Angeles. Died May 5, 1963, aged 36. Graduate of the Los Angeles College of Osteopathic Physicians and Surgeons, 1961. Licensed in California in 1962. M.D. degree from the California College of Medicine, 1962. Doctor Bivens was a member of the 41st Medical Society.

CORNWALL, THOMAS W., San Francisco. Died April 22, 1963, in San Francisco, aged 70. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1923. Licensed in California in 1927. Doctor Cornwall was a member of the San Francisco Medical Society.

CUMMINGS, ROLAND STANLEY, Doylestown, Pennsylvania. Died June 24, 1963, in Doylestown, Pennsylvania, aged 83, of cardiovascular disease. Graduate of the American Medical Missionary College, Battle Creek, Michigan, and Chicago, Illinois, 1904. Licensed in California in 1906. Doctor Cummings was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

GROPPER, ANGEL N., San Francisco. Died April 17, in San Francisco, aged 63. Graduate of Medizinische Fakultät der Universität, Wein, Austria, 1926. Licensed in California in 1940. Doctor Gropper was a member of the San Francisco Medical Society.

GUTERMAN, JOSEPH, San Francisco. Died February 17, 1963, in San Francisco, aged 60. Graduate of Medizinische Fakultät der Universität, Wein, Austria, 1927. Licensed in California in 1942. Doctor Guterma was a member of the San Francisco Medical Society.

HINES, HARRISON RICHARD, Pittsburg. Died June 14, 1963, in Concord, aged 46, of coronary occlusion. Graduate of Temple University School of Medicine, Philadelphia, Pennsylvania, 1941. Licensed in California in 1951. Doctor Hines was a member of the Alameda-Contra Costa Medical Association.

JONES, MALCOLM NIXON, San Francisco. Died June 21, 1963, in San Francisco, aged 58, of heart disease. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1931. Licensed in California in 1931. Doctor Jones was a member of the San Francisco Medical Society.

LAKEY, WILLIAM JORDAN, Canoga Park. Died May 30, 1963, in Sepulveda, aged 87, of cerebral thrombosis. Graduate of the University of Michigan Medical School, Ann Arbor, 1900. Licensed in California in 1922. Doctor Lakey was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

LINN, JOHN LOVEJOY, Glendale. Died June 13, 1963, in Glendale, aged 71. Graduate of the University of Nebraska College of Medicine, Omaha, 1916. Licensed in California in 1929. Doctor Linn was a member of the Los Angeles County Medical Association.

MUDRICK, CHARLES JOSEPH, Napa. Died June 22, 1963, in Vallejo, aged 42, of cancer. Graduate of the University

of California School of Medicine, Berkeley-San Francisco, 1946. Licensed in California in 1946. Doctor Mudrick was a member of the Napa County Medical Society.

OLSON, ALBERT WARREN, Los Angeles. Died June 27, 1963, in London, England, aged 40, of coronary occlusion. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1949. Licensed in California in 1949. Doctor Olson was a member of the Los Angeles County Medical Association.

PANKRATZ, PETER J., Fullerton. Died June 10, 1963, in Long Beach, aged 56. Graduate of the University of Minnesota Medical School, Minneapolis, 1934. Licensed in California in 1960. Doctor Pankratz was a member of the Orange County Medical Association.

POPE, CARL BENDER, El Monte. Died June 5, 1963, in El Monte, aged 53, of heart disease. Graduate of Marquette University School of Medicine, Milwaukee, Wisconsin, 1937. Licensed in California in 1947. Doctor Pope was a member of the Los Angeles County Medical Association.

ROSENTHAL, ADOLPH G., Oakland. Died June 18, 1963, in Oakland, aged 91. Graduate of Cooper Medical College, San Francisco, 1894. Licensed in California in 1894. Doctor Rosenthal was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

SCHMOELE, JOHN M., Santa Barbara. Died June 6, 1963, in Idaho, aged 68. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1919. Licensed in California in 1922. Doctor Schmoele was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

SCOVEL, RALPH E., Shingle Springs. Died June 11, 1963, in Shingle Springs, aged 61. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1929. Licensed in California in 1929. Doctor Scovel was a member of the Sacramento Society for Medical Improvement.

SMITH, SYDNEY KINNEAR, Berkeley. Died June 25, 1963, in Oakland, aged 67, of cerebral thrombosis. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1922. Licensed in California in 1922. Doctor Smith was a member of the Alameda-Contra Costa Medical Association.

USSHER, NEVILLE T., Santa Barbara. Died June 10, 1963, in Santa Barbara, aged 61. Graduate of Yale University School of Medicine, New Haven, Connecticut, 1927. Licensed in California in 1929. Doctor Ussher was a retired member of the Santa Barbara County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

# PUBLIC HEALTH REPORT

**MALCOLM H. MERRILL, M.D., M.P.H.**

*Director, State Department of Public Health*

CALIFORNIA has become the first state to provide a safety order regulating noise levels inside factories. The order "... sets up minimum standards for the control of and exposure to excessive industrial noise in order to contribute to the conservation of employees' hearing."

The order was created because of the increasing awareness of the health effects of noise on the hearing of workers. Whenever exposure to noise equals or exceeds levels established by the American Standards Association, the employer is to provide ear protectors.

It is expected that other states will follow the lead of California, making safety orders for noise as common as those dealing with light and ventilation.

To date, there have been only 11 cases of paralytic poliomyelitis reported in California since the first of the year. This compares with 19 and 35, respectively for the corresponding periods in 1962 and 1961. There have been no deaths.

The Center for Premature Infants at the Palo Alto-Stanford Hospital was officially dedicated recently. The purpose of the Center is to intensively study the premature infant and his response to his environment. Best possible care will be provided by an experienced nursing and physician staff.

Referrals by physicians to the Center are now being accepted by Dr. Irwin A. Schafer, director. Transportation for the infants within 25 miles of the hospital will be provided by an ambulance with a portable incubator and a trained nurse in attendance.

Levels of air pollution as reflected by the concentration of contaminants showed no pronounced

change in 1962, according to the Bureau of Air Sanitation. There was evidence, however, that smog levels were generally a little higher at most sites. In a few instances the values were lower.

The Los Angeles basin suffered a noticeable increase in the number of "eye irritation days" in 1962. That more eye irritation was experienced is reflected by a parallel increase in the "smog warning days" as reported by the Los Angeles County Air Pollution Control District.

The year's data again reveals an air pollution pattern that is recognized as being typical of the California problem. Photochemical smog with high oxidant continues to be experienced in the state's population centers and the Los Angeles region has the most frequent and most severe attacks of smog.

The air quality standards for oxidant—0.15 parts per million for one hour—adopted by the department were exceeded at a number of places. A few sites exceeded this standard on approximately one-half of the days in 1962. Only in Los Angeles was the standard for carbon monoxide—30 parts per million for eight hours—exceeded.

The department again this year has provided funds for several special demonstration projects in local health departments. The projects include a cancer detection program in Los Angeles, a study of illnesses in summer camps in San Bernardino County, dietary practices of senior citizens in Pasadena.

Others are: a glaucoma follow-up in San Jose, family centered health services in Sacramento, demonstration of fly control methods in Orange County and a migrant worker health program in Kern County.







# WOMAN'S AUXILIARY

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## TO THE CALIFORNIA MEDICAL ASSOCIATION

### Legislation

"WE CANNOT LET THEM DOWN"—the *them* representing all the people in allied professions and businesses who are looking to Medicine to continue being the bulwark against further encroachment of federal controls.

Where a few years ago organized physicians fought their battles in relatively a silent fashion, now the actions of the American Medical Association and the California Medical Association get page one billing—and more and more people across the nation are interested in the outcome of legislative government intervention.

It has often been said that people subconsciously dislike physicians as a group yet love their individual physicians. This feeling against the group, however, is being dispelled as organized medicine improves its ability to communicate and offer the public a true understanding of its problems. Talks given to legislators, service groups, allied professions and news media representatives have done much to correct erroneous assumptions and to present the true picture.

Whether we like it or not, we're *in politics*—and politics means legislation. In our 1963 state legislative session alone, our Public Health League found 505 bills—or between 11 and 12 per cent of all bills introduced—relating to the healing professions and the public health, which is a measure of government's interest in the health field.

Certainly no one in the Woman's Auxiliary can be alert to all the 505 bills, but we can go into well planned and effective action when given the signal by our California Medical Association Legislative Committee. This is where the Auxiliary with its 8,200 members can be of invaluable assistance. First of all, physicians must be well informed legislatively and recognize their political responsibility; and secondly, they should insist that their wives be active Auxiliary members if at all possible. There is nothing like the interest and motivation which can be engendered by a husband and wife when

they take time to discuss problems. The desire of individual physicians to be accurately and completely informed and their enthusiasm for doing their part in carrying on the battle to protect their freedoms can easily be transmitted to their wives. At the same time their wives will be receiving legislative information through their auxiliaries—and so the family's medico-political action could be initiated by the wife. It certainly bears repeating that nothing succeeds like education and that the physician has a large audience in his office every day. Also, today's active physician's wife has innumerable contacts in groups to which she belongs—PTA, church, club, study groups and the like.

When the realization fully hits that Medicine has been moving in a progressive direction against the socialistic trend for over 25 years, whether by the early vigilance of a few or the recent efforts of many, it should not be without a tremendous pride that our small medical minority has been able to withstand the onslaught. The very fact that we have not been worn down to quiet acquiescence gives tribute to what has been accomplished.

And so we should never project the fear into potential medical school students or those already in training that they will face a socialized system. We must urge them to fight for freedom. We will not be a victim of federal conquest so long as we believe in ourselves and the rightness of the cause.

Your challenge as physicians and ours as Auxiliary members is to implement "Operation Hometown," the far-reaching program to combat the King-Anderson Bill—H.R. 3920, Hospital Insurance Act of 1963, introduced February 21, 1963. This will involve the discipline of dedication and the utmost in cooperation. We, as Auxiliary members, are your best "girl Fridays." If *all* of us are *sufficiently* "bothered" by what is happening in our legislative halls, we will stem the tide and not let down the many groups depending on us for leadership.

MURIEL F. RUMSEY  
*Legislative Chairman*

# LETTERS *to the Editor*

EDITOR'S NOTE: The 1962 Report of C.M.A. Legal Counsel to the House of Delegates commented on a recent California Supreme Court decision captioned *Rosner vs. Eden Township District Hospital*. Doctor Ben Rosner, the plaintiff in the case, has taken exception to Legal Counsel's summarization. Doctor Rosner's letter follows.

In "Report of Legal Counsel to the President and the House of Delegates" published in the California Medical Association Annual Reports Bulletin for the year 1962, pages 38 and 39, a statement is made: "In one case (*Rosner v. Eden Township District Hospital*) the Supreme Court held that a district hospital (which is a governmental body) cannot lawfully exclude from staff membership a physician who is medically competent and ethical in his practice *solely* because he had freely criticized other physicians and hospital personnel. The Court . . . held that a personality trait, even though objectionable to others, would not relate to the statutory requirements for staff membership."

There is no language in the California Supreme Court decision which directly or inferentially supports these statements. If anything, the Court's holding is directly to the contrary. I extract the following quotations from the Supreme Court decision: ". . . It was stipulated that 'moral character' and 'competence' . . . were not in issue. In view of this stipulation the determination of unworthiness of character was outside the issues; moreover, it finds no support in the evidence.

"Dr. Rosner had been accorded privileges in approximately 40 hospitals, and the record shows that in several of the hospitals there was friction resulting from disagreements as to treatment of patients, criticisms made by him to hospital officials of certain personnel and practices, or misunderstandings relating to his position and powers. Insofar as the merits of the controversies occurring at those hospitals can be determined from the record before us, Dr. Rosner appears in a more favorable light than the other medical personnel involved.

"The evidence relating to the Levine Hospital, where he was employed immediately prior to applying for membership at Eden Hospital, may be summarized as follows: The Levine Hospital is owned by Drs. Samuel and Julius Levine, the latter of whom was also at one time chairman of the board of directors of Eden Hospital. . . . Dr. Rosner told

Dr. Samuel Levine that a nurse-anesthetist . . . was incompetent. . . . Two days later a baby died as a result of an anesthetic given by the nurse, and Dr. Rosner stated to the Levines that the surgeon was responsible . . . and that the Levines were also responsible. . . . Subsequently Dr. Rosner, in reviewing the record of the operation, said to one of the Levines that the record 'on its face' showed malpractice.

"On another occasion there was an argument when Dr. Samuel Levine stated that it was too late to do anything for a patient who had suffered a gunshot wound and Dr. Rosner insisted that the patient be taken to the operating room and efforts made to save him. Dr. Rosner prevailed, and the patient survived and testified at the hearing concerning the argument.

"Shortly after these occurrences, Dr. Rosner was told by Dr. Julius Levine that he would be 'blocked' in the medical society and all the hospitals in the community.

"The refusal of access to a district hospital could, as a practical matter, have the effect of denying to a licensed doctor qualified to practice in California the right to fully exercise his profession. . . . The goal of providing high standards of medical care requires that physicians be permitted to assert their views when they feel that treatment of patients is improper or that negligent hospital practices are being followed. Considerations of harmony in the hospital must give way where the welfare of patients is involved, and a physician by making his objections known, whether or not tactfully done, should not be required to risk his right to practice medicine.

"Moreover, a hospital district should not be permitted to adopt standards for the exclusion of doctors from the use of its hospital which are so vague and ambiguous as to provide a substantial danger of arbitrary discrimination in their application. . . . In these circumstances there is a danger that the requirement of temperamental suitability will be applied as a subterfuge where considerations having no relevance to fitness are present. It may be noted that Dr. Rosner opposed election to the board of directors of a slate of candidates endorsed by members of the medical staff. . . .



"The determination of the board that Dr. Rosner was unworthy in professional ethics was based on findings as to his conduct in the hearings, namely, that in his testimony he discussed medical and surgical problems of other doctors. . . . The only medical and surgical problems and procedures discussed by Dr. Rosner were those which led to friction with other doctors, and his testimony was in response to questions asked or in explanation of matters raised by the board's attorney. . . . In any event there is no evidence that he misrepresented the nature or extent of his experience at the hospitals."

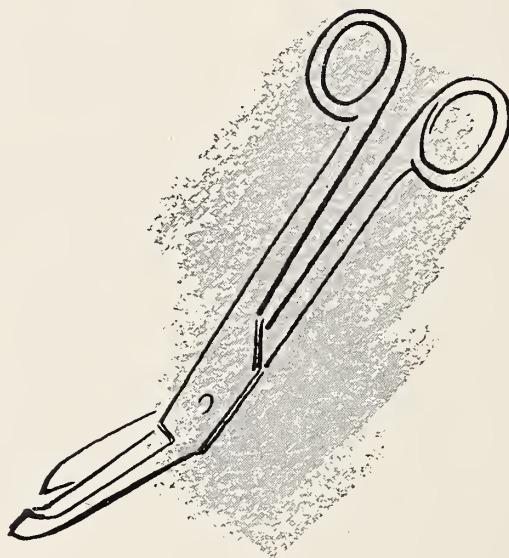
My statements relating to differences were extracted as testimony under oath in cross-examination by Eden Hospital's attorney in open public hearings ordered by the Superior Court of Alameda County after my application had been rejected. Eden's attorney was assisted by counsel provided "as a courtesy" by the official group malpractice insurance carrier for the Alameda-Contra Costa and the 22 other medical societies in northern California, the American Mutual Liability Insurance Company.

The enclosed Supreme Court decision in my favor was concurred in unanimously by all seven Justices, and written by Chief Justice Phil S. Gibson, (citation: 58 Calif. 2d 592).

Neither had I "freely criticized other physicians and hospital personnel," nor did the California Supreme Court decision state anything resembling this; moreover, this statement is false. There is nothing in the record, nor in the decision, indicating any "personality trait" on my part that the Supreme Court considered "objectionable to others."

The authors of the report, Peart, Baraty & Hassard, by Howard Hassard (C.M.A.'s Executive Director since 1958) filed a brief for the C.M.A. as an amicus curiae against my position in the Supreme Court. They are therefore thoroughly familiar with the facts of my case and the Supreme Court decision, and know better than to make and publish such misleading statements.

BEN ROSNER, M.D.  
18 Second Avenue  
San Mateo



# NEWS & NOTES

NATIONAL • STATE • COUNTY

## ALAMEDA

Dr. Alvin R. Leonard, health officer of the Berkeley City Health Department, is recipient of the **John J. Sippy Memorial Award** for 1963. The bronze plaque presented by the Western Branch of the American Public Health Association at its annual meeting in Phoenix, Arizona, in May, is awarded annually "for meritorious service to Western Public Health."

The John J. Sippy Memorial Award was established by friends and associates of Dr. Sippy shortly after his death in 1949. He had been director of public health of the San Joaquin Local Health District from 1923 to 1949.

## NAPA

Appointment of **Dr. Robert J. Spratt**, associate superintendent at Mendocino State Hospital, as superintendent and medical director at Napa State Hospital effective August 1, was announced recently by Dr. Daniel Lieberman, state director of Mental Hygiene.

Dr. Spratt will succeed Dr. Theo Miller who retired last month after 35 years of service with the department.

## SAN FRANCISCO

The annual **Clinical Congress of the American College of Surgeons** will be held during the College's semi-centennial year in San Francisco, October 28 through November 1. More than 11,000 Fellows of the College and guests from all over the world are expected to attend the five-day meeting.

Dr. Loyal Davis, Chicago, president of the College, will preside at fiftieth anniversary ceremonies on the opening morning.

## SANTA CLARA

The **Avalon Foundation** has given **Stanford University School of Medicine** a grant of \$50,000 to be used for scholarships over the next three to five years, Dean Robert H. Alway announced.

"This grant is particularly valuable in that it makes possible **scholarships for first-year medical students**," Dean Alway said.

"Until now money has not been available for first-year scholarships. As a result, some excellent students have not been able to enter Stanford, even though it was their first choice."

This is the third scholarship grant to Stanford from the Foundation. The medical school received \$10,000 in 1961 and again in 1962.

## GENERAL

Appointment of **Dr. Anthony Hordern**, British psychiatrist and a Fulbright Fellow in the United States for four years, as **chief of research for the State Department**

(Continued on Page 144)



WILLIAM O. REINHARDT, M.D.

## New Dean of UC School of Medicine, San Francisco

DR. WILLIAM O. REINHARDT, chairman of the Department of Anatomy at the University of California Medical Center, San Francisco, became Dean of the School of Medicine July 1. His appointment was announced by University President Clark Kerr and Provost J. B. deC. M. Saunders of the San Francisco campus following a meeting of the Board of Regents late in June.

Soon after assuming his new position, the new dean and Dr. Saunders announced the appointment of Dr. Stuart C. Cullen as associate dean and Dr. Moses Grossman as assistant dean. Both men will continue to serve in the faculty positions they held before their new appointments, Dr. Cullen as professor and chairman of the department of Anesthesia, and Dr. Grossman as associate professor of pediatrics.

Dr. Robert H. Crede, professor of medicine, will remain an associate dean and Dr. Malcolm S. M. Watts, associate clinical professor of medicine, will continue as an assistant dean.

Dr. Leon Goldman, professor of surgery, who had asked to be relieved of his assignments as an associate dean for reasons of health and to devote more time to teaching and research, will continue to serve the dean's office as a consultant. Dr. Seymour M. Farber, clinical professor of medicine, who has been



assistant dean for continuing education, will remain in charge of that program as a member of the campus-wide administration.

In a joint statement issued at the time of the appointment of the new dean, Drs. Kerr and Saunders said:

"In Dr. Reinhardt we have a medical scholar and teacher of great distinction, widely respected both in the United States and abroad. Educated in the University of California and a member of its faculty since 1939, he brings to his new position the added rich experience of visiting professorships in England, Indonesia and Japan. We are confident that his leadership will contribute much to the future of medicine in California."

Dr. Reinhardt was born in Colorado Springs, April 18, 1912. He received the A.B. degree from the University of California, Berkeley, in 1932. After two years as a graduate student and teaching assistant in anatomy, he entered medical school, receiving the M.D. degree in 1938 on the San Francisco campus.

The new dean was appointed instructor in anatomy in 1939, after serving a surgical internship. He was named assistant professor in 1944, associate professor in 1948, and professor in 1952. He became department chairman in 1956, succeeding Dr. Saunders, whom he now follows as Dean.

The Regents authorized a full-time deanship for the School of Medicine in April, 1962. Dr. Saunders, dean since 1956, has held the position in addition to that of Provost, or chief academic and administrative officer in charge of all schools and departments, since 1958. He will continue to serve as Provost.

## NEWS NOTES

(Continued from Page 143)

**of Mental Hygiene** has been announced by Dr. Daniel Lieberman, department director.

Dr. Hordern will coordinate the growing program of research into the causes of mental illness and mental retardation, and the most effective methods of treatment.

\* \* \*

The trustees of the **Caleb Fiske Prize** of the Rhode Island Medical Society have announced that the **subject for this year's dissertation** is "Clinical Application of Newer Discoveries in Enzyme Chemistry." The dissertation must be typewritten, double spaced, and should not exceed 10,000 words. A cash prize of \$500 is offered. Essays must be submitted by December 11, 1963.

Complete information regarding the contest may be ob-

tained from the Caleb Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence 3, Rhode Island.

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Project HOPE has announced **three medical teaching and service programs** to commence in Latin America in 1963.

1. A team of nine **physicians in certain specialties**, as well as nurses and technicians to work with the **University of Trujillo School of Medicine** at the new Trujillo, Peru, Regional Hospital. To begin June, 1963. Physicians needed include internists, general surgeons, pediatricians, pathologists, clinical pathologists, neurologists, radiologists, obstetricians, orthopedists and physiatrists.

2. A teaching-medical service program on the **Peruvian Amazon and its headwaters**, using a small hospital ship and several smaller vessels, in cooperation with the government of Peru. To commence in the Fall of 1963.

3. The HOPE is expected to sail to **Guayaquil, Ecuador**, in the Fall of 1963 to begin another **ship and shore-based medical teaching and service** operation in cooperation with the medical and nursing professions of Ecuador and the Faculty at the University of Guayaquil.

Interested physicians may write to Project HOPE, 1016 20th Street, N.W., Washington 6, D. C.

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**Applications from research investigators** for support of studies to be conducted during the fiscal year beginning July 1, 1964, are now being accepted by the **American Heart Association**.

The deadline for submitting applications for **Advanced Research Fellowships and Established Investigatorships** is September 15, 1963.

Applications in the **Grants-in-Aid** category must be received by November 1, 1963.

Awards will be made as follows:

**Established Investigatorships:** Usually awarded for five years, subject to annual review, in amounts ranging from \$8,500-\$12,500 yearly plus dependency allowances, to scientists of proven ability who have demonstrated the capability of conducting independent investigation. Additionally, a departmental grant of \$1,000 is made to the investigator's institution for use by the head of the investigator's department.

**Advanced Research Fellowships:** Awarded for one or two-year periods to post-doctoral applicants with at least one year of full-time research training or experience at the time of application, but who have not yet clearly demonstrated the ability to carry out independent research. Stipends range from \$6,500-\$8,600 annually, plus dependency allowance. After the first year, Advanced Research Fellows are permitted to spend up to 25 per cent of their time in professional and scientific activities not strictly of a research nature. A departmental grant of \$500 is made to the institution for the use of the department head.

**Grants-in-Aid:** Made to experienced investigators to help underwrite the costs of specified projects, such as equipment, technical assistance and supplies.

Further information and application forms for awards may be obtained from the Director of Research, American Heart Association, 44 East 23rd Street, New York 10, New York.

# EDUCATION NOTICES

## MEETINGS AND COURSES

### COMMITTEE ON CONTINUING MEDICAL EDUCATION

THIS BULLETIN of the dates of continuing education programs and the meetings of various medical organizations in California is supplied by the Committee on Continuing Medical Education of the California Medical Association. In order that they may be listed here, please send communications relating to your future meetings or postgraduate courses to Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2.

## MEDICAL MEETINGS

### SEPTEMBER MEETINGS

Sept. 9-13—**American College of Physicians** Postgraduate Course. "Basic Mechanisms in Internal Medicine," University of California School of Medicine, San Francisco, Henry Brainerd, M.D., Director. Monday-Friday. Members \$60. Non-members \$100. Contact: Edward C. Rosenow, Jr., M.D., executive director, 4200 Pine Street, Philadelphia.

Sept. 12—**Los Angeles Pediatric Society.** Los Angeles County Medical Association Building. Thursday, 7:00 p.m. Contact: Wm. Misbach, M.D., secretary-treasurer, 17258 Ventura Boulevard, Encino.

Sept. 12-17—**Pacific Dermatologic Association.** Hilton Hawaiian Village Hotel, Honolulu. Thursday-Tuesday. Contact: Gordon MacDonald, M.D., secretary-treasurer, 4294 Orange Street, Riverside.

Sept. 12-14—**Saint John's Hospital** Postgraduate Assembly. Saint John's Hospital, Santa Monica. Thursday-Saturday. Contact: John C. Eagan, M.D., director, Saint John's Hospital, 1328 Twenty-second Street, Santa Monica.

Sept. 13—**Rees Stealy Medical Clinic,** 3rd Annual Medical Symposium. Hotel del Coronado, San Diego. 2:00 p.m. Contact: James Bone, business manager, 2001 - 4th Avenue, San Diego 1.

Sept. 17-Oct. 22.—**San Francisco Academy of General Practice**-sponsored Fort Miley Symposium, medical and surgical clinics 10th Annual Session. Fort Miley Veterans' Administration Hospital Auditorium. Tuesdays, 8:00-10:00 p.m. Members, \$15. Non-members, \$20. Residents and interns, no charge. Contact: Lester C. Krotcher, M.D., chairman, 595 Buckingham Way, San Francisco.

Sept. 21-22—**Vista Hill Psychiatric Foundation** Postgraduate Seminar in Psychiatry. In conjunction with

Dept. of Psychiatry, USC School of Medicine. Mesa Vista Hospital, San Diego. Saturday-Sunday. 9:00 a.m.-4:00 p.m. Contact: A. J. Enelow, M.D., 1934 Hospital Place, Los Angeles 33—or: Thomas McMillan, M.D., 7850 Vista Hill Avenue, San Diego 23.

Sept. 25—**National Kidney Disease Foundation, Southern California Chapter,** Third Annual Professional Symposium on Kidney Disease. Ambassador Hotel, Los Angeles. Wednesday. 9:00 a.m.-5:00 p.m.. \$15, including lunch. Contact: Mrs. Jean Gordon, administrative assistant, 5880 San Vicente Boulevard, Los Angeles 19.

Sept. 25-26—**American Medical Association** Congress on Occupational Health. Jack Tar Hotel, San Francisco. Contact: Henry F. Howe, M.D., secretary, Council on Occupational Health, AMA, 535 North Dearborn Street, Chicago, Illinois.

Sept. 26-29—**American Psychiatric Association.** Sixth Western Divisional Meeting. St. Francis Hotel, San Francisco. Contact: William Bellamy, M.D., 450 Sutter Street, San Francisco.

Sept. 27-28—**Seventh Annual Western Industrial Health Conference.** Jack Tar Hotel, San Francisco. Friday-Saturday. Contact: Chapman Burke, Code 732, Mare Island Naval Shipyard, Vallejo, California.

### OCTOBER MEETINGS

Oct. 2-4—**San Francisco Heart Association** 33rd Annual Postgraduate Symposium on Heart Disease. St. Francis Hotel, San Francisco. Wednesday-Friday. 9:00 a.m.-5:00 p.m. \$35. Interns, Residents no fee. Contact: Gene C. Taylor, Executive Director, 259 Geary Street, San Francisco 2.

Oct. 3-6—**Pacific Coast Fertility Society.** Flamingo Hotel, Las Vegas, Nevada. Contact: Julius Winer, M.D., secretary, 9915 Santa Monica Blvd., Beverly Hills.

Oct. 4-5—**San Diego County Heart Association** 13th Annual Professional Symposium on Heart Disease. Town and Country Hotel, Mission Valley Hotel Circle. Friday, 1:00 p.m.-5:00 p.m.; Saturday 9:00 a.m.-5:00 p.m. \$5. Contact: Mr. O. M. Avison, executive director, 2545 Fourth Avenue, San Diego 3.

Oct. 7-9—**American Electroencephalographic Society.** Jack Tar Hotel, San Francisco. Monday-Wednesday. Contact: Kenneth A. Kooi, M.D., secretary, University of Michigan Medical Center, Ann Arbor, Michigan.

Oct. 9-11—**California Division American Cancer Society.** Annual Meeting. El Dorado Motel, Sacramento. Wednesday-Friday. 9:00 a.m. daily. Contact: Robert Murphy, 875 O'Farrell Street, San Francisco.

Oct. 17—**San Diego Academy of Medicine** and the Tuberculosis and Health Association of San Diego County. Medical Symposium on Respiratory Diseases. El Cortez Hotel, San Diego. Thursday. 1:00 to 9:00 p.m. Contact: Harvey O. Randel, M.D., 3861 Front Street, San Diego.

Oct. 17-20—**Academy of Psychosomatic Medicine.** Sheraton-Palace Hotel, San Francisco. Contact: Klaus Berblinger, M.D., program chairman, Langley Porter Neuropsychiatric Institute, University of California School of Medicine, San Francisco 22.

Oct. 18—**Kern County General Hospital** Annual Postgraduate Conference. Bakersfield. Contact: George A.



Paulsen, M.D., chairman, Kern County General Hospital, 1830 Flower Street, Bakersfield.

Oct. 18-19—**Kaiser Foundation Hospitals' Seventh Annual Symposium.** Fairmont Hotel, San Francisco. Friday, 7:30 p.m.-9:30 p.m., Saturday, 9:00 a.m.-5:00 p.m. Contact: Martin A. Shearn, M.D., Director of Medical Education, Kaiser Foundation Hospital, Oakland 11.

Oct. 20-23—**California Academy of General Practice Annual Scientific Assembly.** El Cortez Hotel, San Diego. Non-members \$10. Contact: Mr. William W. Rogers, executive secretary, 9 First Street, Room 900, San Francisco 5.

Oct. 23-24—**American Heart Association Council on Arteriosclerosis.** Annual Meeting. Biltmore Hotel, Los Angeles. Non members \$15. Contact: Richard Hurley, M.D., 44 East 23rd Street, New York 10, N. Y.

Oct. 23-25—**California Hospital Association.** 1963 Annual Meeting. Yosemite National Park. Wednesday-Friday. Contact: California Hospital Association, 760 Market Street, San Francisco, EX 7-4730.

Oct. 24-26—**American Association for the Surgery of Trauma.** Mark Hopkins Hotel, San Francisco. Contact: William T. Fitts, Jr., M.D., secretary, 3400 Spruce Street, Philadelphia, Pennsylvania.

Oct. 25-27—**American Heart Association Annual Scientific Sessions.** Biltmore Hotel, Los Angeles. Members, medical students, house officers, research fellows, graduate students, U.S. Armed Forces—Free. Others, \$15. Contact: James McGraw, 44 E. 23rd Street, New York 10.

Oct. 27-Nov. 1—**American College of Surgeons Clinical Congress.** San Francisco. Contact: John Paul North, M.D., Director, American College of Surgeons, 40 East Erie, Chicago 11, Illinois.

Oct. 30-31—**California Conference of Local Health Officers.** Fresno Hacienda. Wednesday-Thursday. Contact: Acton W. Barnes, Assistant Chief, Administrative Division of Community Health Services, California State Dept. of Public Health, 2151 Berkeley Way, Berkeley 4.

Oct. 30-Nov. 2—**Nevada State Medical Association.** Joint scientific meeting with Rocky Mountain Medical Conference. The Dunes Hotel, Las Vegas. Wednesday-Saturday. \$20. Contact: Nelson B. Neff, executive secretary, 3660 Baker Lane, Reno, Nevada.

#### NOVEMBER MEETINGS

Nov. 1-3—**California Society of Internal Medicine Annual Meeting.** El Mirador Hotel, Palm Springs. Contact: Robert L. Paver, M.D., secretary-treasurer, 350 Post Street, San Francisco.

Nov. 1-3—**Southern California Psychiatric Society Annual Fall Convention.** Vacation Village Hotel, San Diego. 8:30 a.m. Contact: Ralph M. Obler, M.D., chairman arrangements committee, 427 North Camden Drive, Beverly Hills.

Nov. 5-13—**Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu, Hawaii. Contact: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii.

Nov. 6-7—**Los Angeles Pediatric Society,** 20th Annual Brennemann Memorial Lectures. Ambassador Hotel, Los Angeles. Wednesday-Thursday. Contact: William D. Misbach, secretary, 17258 Ventura Blvd., Encino.

Nov. 7-10—**San Diego Chapter of the California Academy of General Practice.** Eighth Scientific Symposium. Flamingo Hotel, Las Vegas. Thursday-Sunday. Contact: Edwin N. Reithmayer, M.D., 1115 West Chase, El Cajon.

Nov. 8-10—**Forty First Medical Society First Annual Convention.** Riviera Hotel, Palm Springs. Contact: Mr. Don E. Rosenthal, Administrative Director, 4775 Santa Monica Boulevard, Los Angeles 29, California.

Nov. 11-12—**Western Society for Pediatric Research.** Eleventh Annual Meeting. Ambassador Hotel and Childrens Hospital, Los Angeles. Monday-Tuesday. Contact: Denman Hammond, M.D., secretary-treasurer, Childrens Hospital of Los Angeles, 4570 Sunset Boulevard, Los Angeles.

Nov. 13—**American College of Physicians Southern California Region,** Annual Basic Science Lecture. Statler Hilton Hotel, Los Angeles. 6:30 p.m. Contact: George C. Griffith, M.D., 1136 West 6th Street, Los Angeles 17.

Nov. 15-16—**San Diego County General Hospital.** Seventeenth Annual Postgraduate Assembly. Friday-Saturday. Contact: Joseph M. Thompson, M.D., 2290 Sixth Avenue, San Diego.

Nov. 15-16—**California Nurses Association Institute on the Medico-Legal Aspects of Nursing Practice.** Jack Tar Hotel, San Francisco. Friday-Saturday. Contact: Marion McDermott, R.N., CNA, 185 Post Street, San Francisco, YUkon 6-2220.

#### DECEMBER MEETINGS

Dec. 2-6—**American College of Chest Physicians,** Postgraduate Course on Diseases of the Chest. Ambassador Hotel, Los Angeles. Monday-Friday. 9:00 a.m.-5:00 p.m. Contact: Alfred Goldman, M.D., program chairman, 416 N. Bedford Drive, Beverly Hills.

Dec. 2-6—**American College of Physicians Postgraduate Course.** "Psychiatry for the Internist," Phil R. Manning, M.D., and Allen J. Enelow, M.D., co-directors. Los Angeles County General Hospital. Monday-Friday. Members \$60. Non-members \$100. Contact: Edward C. Rosenow, Jr., M.D., executive director, 4200 Pine Street, Philadelphia.

Dec. 3-6—**Scripps Clinic and Research Foundation.** "Advances in Cardiovascular Diseases." La Jolla. Tuesday-Friday. \$100. Contact Harold Lowe, M.D., assistant program chairman, Scripps Clinic, La Jolla.

Dec. 5-7—**West Coast Allergy Society,** Annual Meeting. Las Vegas, Nevada. Thursday-Saturday. 9:30 a.m.-5:00 p.m. Non-members \$25.00. Contact: Jack M. Chesebro, executive secretary, 1818 S.E. Division, Portland 2, Oregon.

Dec. 6—**Southern California Public Health Association.** Annual Meeting. Huntington-Sheraton Hotel, Pasadena. Friday. 9:00 a.m.-4:30 p.m. Members \$1. Non-members \$2. Contact: Bernard Weintraub, secretary, Los Angeles City Health Dept., 111 East 1st Street, Los Angeles.

Dec. 13-15—**California Society of Pathologists Annual Meeting.** Riviera Hotel, Palm Springs. Friday-Sunday. Contact: W. K. Bullock, M.D., secretary, Los Angeles County Hospital, Dept. of Pathology, Los Angeles.

## POSTGRADUATE EDUCATION

### AUDIO-DIGEST FOUNDATION

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### UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Aug. 23-24—**The Shoulder—Anatomy, Pathology, and Surgery.** Friday-Saturday. 12 hours.\*

Aug. 28-31—**Radiation and the Nervous System.** Wednesday-Saturday.\*†

Sept. 5-7—**The Adolescent.** Thursday-Saturday. 18 hours.\*

Sept. 12-Dec. 5—**Teaching Clinics.** Thursday evenings. 24 hours.\*

Oct. 16-April 15, 1964—**Basic Science Course in Ophthalmology.** Wednesday evenings.\*†

Dec. 6-7—**Management of Gynecologic and Urological Problems.** Friday-Saturday.\*†

Feb. 19-29, 1964—**Clinical Postgraduate Program in Mexico City.**\*†

Mar. 7-28, 1964—**Clinical Postgraduate Program in Egypt.**\*†

April 11-May 2, 1964—**Clinical Postgraduate Program in Hong Kong.**\*†

Dates by Arrangement—**Clinical Traineeship—Anatomy, Anesthesia, Dermatology, Pediatrics, Radioisotopes, Urology:** 2 weeks, \$150; 4 weeks, \$250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, 478-9711, Ext. 2114.

### LOMA LINDA UNIVERSITY

As Arranged—**Traineeships** in clinical and other departments are available by arrangement with department chairmen of the Postgraduate Division. 80 hours minimum.

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For course information contact: W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles 33, ANgelus 9-7241, Ext. 214.

\*Fee to be announced.

†Hours to be announced.

### PRESBYTERIAN MEDICAL CENTER

Nov. 9—**Arthritis.** Saturday. 8 hours. \$25.

Nov. 15-16—**Problem Cases in Clinical Ophthalmology.** 16 hours. \$40. Contact: Eye Bank, Presbyterian Medical Center.

Dec. 7—**Practical Therapy of Functional Illness.** Saturday. 8 hours. \$25.

Jan. 11—**Medical Emergencies.** Saturday. 8 hours. \$25.

Jan. 25—**Surgical Emergencies.** Saturday. 8 hours. \$25.

For information contact: Arthur Selzer, M.D., chairman, Education Committee, Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15. WEst 1-8000.

### UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Sept. 9-13—**Basic Mechanisms in Internal Medicine.** Monday-Friday. 30 hours.\*

Sept. 14-15—**Clinical Manifestations of Anxiety.** Herrick Memorial Hospital, Berkeley. Saturday-Sunday.\*†

Sept. 18-Dec. 4—**Practical Psychotherapy.** Langley Porter Neuropsychiatric Institute. Wednesday. 60 hours. \$25.

Sept. 20-21—**Clinical Pediatrics: Renal Disease and Electrolyte Imbalance.** Friday-Saturday. 12 hours. \$40.

Sept. 24-Nov. 5—**An Overview of Mental Retardation.** Sonoma State Hospital. Tuesdays. 12 hours. \$10.

Sept. 26-Oct. 31—**Neuropsychiatry in General Practice.** Napa State Hospital. Thursdays. 12 hours. \$10.

Sept. 27-29—**Current Problems in Surgery.** Franklin Hospital, San Francisco. Saturday-Sunday. 15 hours. \$25.

Sept. 28-29—**Psychiatric Management in General Medicine.** San Mateo Peninsula Hospital. Saturday-Sunday. 12 hours. \$15.

Oct. 4-6—**Progress in Urology.** Friday-Sunday. 18 hours. \$60.

Oct. 9-12—**Retinal Detachment Symposium.** Wednesday-Saturday. 24 hours. \$75.

Oct. 12-Nov. 16—**Neuropsychiatry in Medical Practice.** Agnew State Hospital. Saturday. 12 hours. \$10.

Oct. 19—**The Handicapped Child.** Children's Hospital, San Francisco. Saturday. 7 hours. \$15.

Oct. 19-Nov. 23—**Postgraduate Seminars in Clinical Sciences.** Mercy Hospital, Sacramento. Saturdays. 9 hours. No fee.

Oct. 24-26—**The Preclinical Basis of Gynecology.** Thursday-Saturday. 15 hours. \$60.

Nov. 1-2—**Graphic Methods in Cardiology.** Friday-Saturday. 12 hours. \$40.

Nov. 9-11—**Mental Retardation.** Saturday-Monday. 18 hours. \$15.

Dec. 5-7—**Annual Ophthalmology Postgraduate Course.** Thursday-Saturday. 15 hours. \$75.

Dec. 6-7—**Basic Electrocardiography.** Franklin Hospital, San Francisco. Friday-Saturday. 12 hours. \$40.

Dec. 7-8—**Psychiatry in General Practice.** Stockton State Hospital. Saturday-Sunday. 12 hours. \$15.

Dec. 13-14—**Orthopedics: Problems of Soft Tissue Disease.** Friday-Saturday. 12 hours. \$40.

\*Fee to be announced.

†Hours to be announced.



Jan. 11.—**Adverse Reactions in Therapy.** Children's Hospital, San Francisco. Saturday. 6 hours. \$15.

Jan. 24-26—**Annual Symposium: Man and Civilization.** Friday-Sunday. 18 hours. \$25.

Continuously—Courses presented by special arrangement: Principles and Clinical Uses of Radioisotopes (full time, one month).

For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MONTROSE 4-3600, Ext. 179.

#### UNIVERSITY OF SOUTHERN CALIFORNIA

Sept. 17-Dec. 3—**Elements of Practical Cardiology.** Los Angeles County Hospital. Tuesdays. 7:30-9:30 p.m. \$75.

Sept. 23-Oct. 4—**Intensive Review of Internal Medicine.** Los Angeles County Hospital. Two weeks. 8:30 a.m.-12:30 p.m. \$75.

Sept. 25-Nov. 20—**Bedside Cardiology.** St. Vincent's Hospital. Wednesdays. 7:30-9:30 p.m. \$65.

Sept. 26-Dec. 19—**Bedside Clinics and Set Clinics in Internal Medicine.** Los Angeles County Hospital. Thursdays. 7:30-9:30 p.m. \$75.

Oct. 5—**Heparin, Its Structure, Pharmacology, and Clinical Usage.** Statler Hilton Hotel, Pacific Ballroom. Saturday. 9:00 a.m.-5:15 p.m. 7 hours. \$5.

Oct. 10-11—**Gastroenterology.** Mayfair Hotel, Gold Room, 1256 West 7th Street, Los Angeles. Thursday-Friday.

8:30 a.m.-5:00 p.m. \$40. (Includes 2 coffee breaks and 2 luncheons.)

Oct. 25—**Scoliosis.** Orthopaedic Hospital. Friday. 8:30 a.m.-5:00 p.m. 8 hours. \$25.

Oct. 28—**Practical Office Dermatology.** Los Angeles County Hospital, Outpatient Clinic. Monday. 8:30 a.m.-5:00 p.m. \$25. (Includes 2 coffee breaks and 2 luncheons.)

Nov. 5-26—**Medical Funduscopy.** Los Angeles County Hospital, Ward 5000. Tuesdays. 7:30-9:30 p.m. \$37.50.

Nov. 7-8—**Clinical Conferences and Case Presentations.** Los Angeles County Hospital. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$25. (Includes 2 coffee breaks and 2 luncheons.)

Nov. 14-15—**Sexual Problems Encountered in Medical Practice.** Huntington Sheraton Hotel. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$40. (Includes 2 coffee breaks and 2 luncheons.)

Dec. 2-6—**Psychiatry for the Internist.** Los Angeles County Hospital. Monday-Friday.\*†

Continuously—**Basic Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$100. Physicians may register at any time.

Continuously—**Advanced Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$85. Physicians may register at any time.

For course information contact: Phil R. Manning, M.D., Assoc. Dean, Postgraduate Division, USC School of Medicine, 2025 Zonal Ave., Los Angeles 33, CA 90033, Ext. 9.

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## THE PHYSICIAN'S *Bookshelf*

**PHYSIOLOGY OF THE CIRCULATION IN HUMAN LIMBS IN HEALTH AND DISEASE**—John T. Shepherd, M.D., M.Ch., D.Sc., Professor of Physiology, Mayo Foundation Graduate School, University of Minnesota, Rochester, Minnesota; Consultant, Section of Physiology, Mayo Clinic; Formerly Reader in Physiology, The Queens University of Belfast. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1963. 416 pages, 179 illustrations, \$12.00.

This book is timely; the physiology of the human limb circulation as it pertains to general circulatory disorders and peripheral vascular disease has not been so clearly and authoritatively reviewed in English since the publication of Abramson's monograph in 1944.\* This field of study has not been popular in America in recent decades. Therefore, Dr. Shepherd's work is particularly valuable because it correlates and brings into focus the foreign literature, most of which has come from the British laboratories.

The first 271 pages deal with the basic physiology of the nervous, local and humoral control of the cutaneous and muscular circulations. Chapters are devoted to the effects of sympathectomy, of exercise and of physical agents such as temperature and pH. Detailed attention is given to the influences of the better-known naturally occurring vasoactive agents, including the catecholamines, histamine, 5-hydroxy-tryptamine, vasopressin, oxytocin, bradykinin and angiotensin. A chapter summarizes the current knowledge about the "capacity" function of the low-pressure vessels. The lymphatic system is not discussed.

The remaining 129 pages are concerned with pathologic phenomena. After a thorough consideration of intermittent claudication and of Raynaud's syndrome, a number of problems not usually considered in books on vascular disease are reviewed, e.g., essential hypertension, pheochromocytoma, idiopathic orthostatic hypotension and several metabolic and neurologic disorders.

This does not pretend to be a complete textbook of circulatory disorders. Appropriately, the greatest emphasis has been given to areas where concepts are changing because of new knowledge and to those areas where the author has made personal contributions. The book was intended as a survey for scholars entering the field and as a source book for investigators working in circulatory physiology and clinicians dealing with cardiovascular diseases. It should serve effectively in these roles because it is comprehensive, clearly written and well illustrated. Readers who are unfamiliar with the field will find the material rather highly condensed. Amplification is provided for by the carefully selected references listed at the end of each chapter and cited in the text.

ELLEN BROWN, M.D.

\*Abramson, David I.: *Vascular Responses in the Extremities of Man in Health and Disease*, University of Chicago Press, Chicago, 1944.

**KNOW YOUR SCHOOL PSYCHOLOGIST**—Wilma E. Hirst, Ed.D., Coordinator of Guidance and School Psychologist, Cheyenne Public Schools, Cheyenne, Wyoming. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 240 pages, \$6.75.

This book attempts a comprehensive description of the school psychologist's role in relation to individual children, the school, and the community. It is a clearly written and very readable text utilizing frequent case study examples for illustration and emphasis. As with many books, however, which attempt to cover all aspects of a broad field of study within fairly limited space *Know Your School Psychologist* seldom deals with issues at any depth.

This book will undoubtedly prove useful to teachers and parents who will gain a perspective of the part school psychologists can and should play in the educational system. Physicians will also get an overview of the field of school psychology although Dr. Hirst has not fully explored the collaborative possibilities of the medical-psychologic relationship in the school setting.

The major contribution of *Know Your School Psychologist* is found in its broad statement of the school psychologist's orientation and skills and in the setting of realistic expectations for lay and professional individuals with regard to his place on the school team.

FRANK M. HEWETT, Ph.D.

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**GASTROENTEROLOGY—VOLUME I—SECOND EDITION**—Henry L. Bockus, M.D., Emeritus Professor of Medicine, University of Pennsylvania Graduate School of Medicine, and Present and Former Colleagues at the University of Pennsylvania Graduate School of Medicine and School of Medicine. W. B. Saunders Company, Philadelphia, Pa., 1963. 958 pages, \$25.00.

This long awaited second edition of the only comprehensive textbook on gastroenterology in the English language appears seventeen years after the initial edition. Completely rewritten, volume I on the *Examination of the Patient and the Esophagus and the Stomach* will be followed by two subsequent volumes on other segments of the gastrointestinal tract and the liver, pancreas and biliary tract.

Since the book has been written by Dr. Bockus and the members of his "school" it has, as the preface states, a "certain uniformity in method and in philosophy of content." This fortunate circumstance gives the volume the unity often lacking in a work by multiple authors. The reader is immediately impressed with the basic clinical approach to the patient and to the diseases discussed. This is a clinical book, for clinicians, readable, understandable and practical. For the practicing physician there is sufficient discussion of the anatomic, biochemical, physiologic and pathologic aspects of disease to give him a background and understanding of the clinical features of the diseases of the esophagus and stomach and the diagnosis and treatment of them. Indeed, the gastroenterologist, the internist, the ab-



dominal surgeon and the physician interested in research in gastroenterology will find this book indispensable in consideration of any aspect of clinical problems within the field it covers.

While the material presented is basically that accumulated during the long clinical experience of Dr. Bockus and his pupils there is woven into the text the clinical and surgical experience of many of the leading clinicians and those in the great medical centers of this country and abroad. This gives the reader a broader basis of knowledge, supplements the views and experience of the Bockus school and leads to an excellent bibliography for exploration of specific subjects.

Up to date in discussion of such subjects as drugs and endocrine factors in relation to peptic ulcer, cytologic studies and gastroscope in diagnosis, there is even a section on gastric freezing and cooling in the management of peptic ulcer and bleeding. At the same time the text includes in an up to date form much of the well recognized and accepted basic stuff in the diagnosis and treatment of disease of the esophagus and stomach. The reader will find discussion of material of principally historical interest such as syphilis of the stomach and the Einhorn string test as well. Not included in this volume is discussion of functional gastrointestinal or gastric disorders.

The text is unusually well illustrated with tables and charts, with diagrams of pain reference, with colored plates of organ relationships and diseases and with excellent radiographs showing a wide variety of diseases and complications of them. The publisher has done the usual excellent Saunders job of workmanship.

All in all the publication of the second edition of Bockus' *Gastroenterology* marks an important milestone in gastroenterology in the Western World. It will serve as a most useful instrument in the education of countless practicing physicians, medical scientists and students. Until the third edition appears it almost certainly will stand alone as the outstanding reference work in gastroenterology in the world.

DWIGHT L. WILBUR, M.D.

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**THE GROWTH OF MEDICAL THOUGHT**—Lester S. King, M.D. The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Ill., 1963. 254 pages, \$5.50.

Medicine is partly art and partly science. Art in turn is many things. The author of this interesting work reviews the growth of medical thought from the eras when mythological philosophies predominated, through the intervening more or less ecclesiastical centuries until the present day, when many choose to believe that science predominates.

The book is divided into five sections. The first deals with medical thought as exemplified by the works or fables of Apollo, Asclepius and Hippocrates. Of these of course, Hippocrates was outstanding, some of his descriptions of disease being so precise that a diagnosis can be made therefrom to this day.

Six centuries later Galen produced theories of disease based on observation and logic. Galen, his so-called "faculties" and the "problem of change" occupy the second section.

The third is titled "The philosophic approach" and commences naturally with the year 1493 when Philippus Aureolus Theophrastus Bombastus P. von Hohenheim was born—Paracelsus, to you dear friend—the progenitor of "a dynamic approach to philosophy" despite the alleged inconvenience of having been gelded by a sow in early life. Amongst the many observations of Paracelsus was that pertaining to "the fog" which lies between heaven and earth. To this he attributed asthma, coughing and short-

windedness. Conversely, the fog in the mines caused the miners' disease. Remarkable prescience.

Section four deals with progress through the eras of Vesalius, Harvey and Hoffman, the first two astride the world of medical thought like a twin colossus.

In section five, the cell therapy, as exemplified by the works of Boerhaave, Schwann, Rokitsansky and Virchow is discussed and expounded.

The epilogue dwindles downhill through filterable viruses, ionizing radiations, molecular disorders and other minutiae, the shadows of which, while dramatic and of vast import, are less readily scanned than those of the findings in the previous twenty centuries.

The author is a pathologist, now on the editorial staff of the *Journal of the American Medical Association*. His style is not at first easy, but his work is well annotated, rewarding, and recommended to all who would contemplate the circumambience of our profession.

L. HENRY GARLAND, M.D.

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**SPORTS MEDICINE**—Edited by J. G. P. Williams, M.B., B.Chir., M.R.C.S., L.R.C.P., D.Obst., R.C.O.G., Registrar, National Spinal Injuries Centre, Stoke Mandeville Hospital. Foreword by Sir Arthur Porritt, K.C.V.O., K.C.M.G., M.S., F.R.C.S., President, Royal College of Surgeons of England; Chairman, British Association of Sport and Medicine. The Williams & Wilkins Co., 428 East Preston Street, Baltimore 2, Maryland, 1962. 420 pages, \$12.00.

The author writes about all the various types of injuries associated with athletic competition, and offers a guide for motivating and training athletes.

The first three chapters, dealing with the physiological and psychological aspects of sports, should be of great interest to the coach, the athlete and the physician.

The mid-portion of the book, while dealing with elementary anatomy and physiology which should delight the non-medical reader, also contains many proven and excellent methods of treating the injured athlete. His numerous illustrations make the text more interesting, especially those of specific athletes and athletic events. Unfortunately the author is British, and medications he recommends are unknown in this country by the name under which they are sold in England. The treatment of adductor adhesions was new to this reviewer.

The last five chapters in the book encompass team training, nutrition, dental hygiene and immunization. There is also an excellent chapter on the use of competitive sports for rehabilitation of seriously disabled and handicapped individuals. The author's discussion of motivation and his description of "guts" indicates insight into the complex factors which indicate athletic performance.

CHARLES G. HUTTER, M.D.

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**BRONCHIAL ASTHMA**—Albert H. Rowe, M.S., M.D., Lecturer in Medicine (Emeritus), University of California Medical School, San Francisco, California; Allergist, Samuel Merritt Hospital, Consultant in Allergy, Oakland Naval Hospital, Oakland, California, and Albert Rowe, Jr., M.D., Associate Chief of Medicine, Highland Hospital and Samuel Merritt Hospital, Oakland, California. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1963. 250 pages, \$11.00.

Whenever in allergy circles food allergy is discussed, the name of Albert H. Rowe is sure to be mentioned. For well over thirty years, Dr. Rowe has been stressing the importance of food hypersensitivity among allergic individuals as an important and often the important etiological factor. His cereal-free diet which eliminates all cereals as well as eggs, milk and wheat along with chocolate, fish, selected fruits and vegetables, all spices and condiments, is well known, not only in the United States but throughout the



world. It, therefore, is no surprise that in the present publication, *Bronchial Asthma*, written by Dr. Albert H. Rowe and Dr. Albert Rowe, Jr., the cereal-free diet is strongly emphasized. The Doctors Rowe feel that food allergy is revealed in about 20 to 30 per cent of patients with bronchial asthma, especially in children and old people, and in association with inhalant allergy in an additional 30 to 50 per cent. In this book explicit instructions are given for preparation of the diet at home or in the hospital and how it should be supervised by the attending physician for good results to be obtained.

Although a good portion of the volume is taken up with the discussion of food allergy and the aforementioned cereal-free elimination diets and case histories illustrating their proper use, other causes of bronchial asthma such as inhalant allergy and infection are not neglected. Allergy case history taking, physician examination, laboratory tests including allergy skin testing are comprehensively described. The management of bronchial asthma not only with food diets but with desensitization and drugs is carefully, judiciously and fully covered in the text. A survey of the literature of asthma is included. Lesser topics such as a discussion of the anatomy and physiology of the bronchial tree, pathology of asthma, the blocking antibody, antibodies in the hapten reaction and the role of antibody in hypersensitivity disease are also amply discussed.

With well over 260 references in the bibliography and 47 case histories, which make interesting and fascinating reading, the book is recommended to any physician who treats patients with bronchial asthma. In effect, it is a *vade mecum*.

M. COLEMAN HARRIS, M.D.  
NORMAN SHURE, M.D.

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**THE PNEUMOCONIOSES**—A. J. Lanza, M.D., Editor, Director Emeritus and Professor Emeritus, Institute of Industrial Medicine, New York University. Grune & Stratton, Inc., 381 Park Avenue South, New York, 1963. 154 pages, \$7.50.

A. J. Lanza, the Editor of this compact volume, has had wide experience in the field of pneumoconioses. In addition to a chapter on silicosis, he discusses mixed dust and benign pneumoconioses. Three other authors write on asbestosis, diatomaceous earth, beryllium and coal pneumoconioses. The pulmonary lesions caused by inhalation of organic dust such as byssinosis and boggasosis are not covered in this volume. The inorganic dusts which do not cause progressive pulmonary changes such as carbon and marble dust, and the poisonous dusts such as lead and manganese are not included.

There is an excellent section on the pathology of the pneumoconioses, an understanding of which is necessary for correct interpretation of the roentgen and clinical changes. These chapters, however, suffer from lack of illustrations of the gross and microscopic findings.

Therapy has to be based on physiological evaluation of the patient. Pulmonary function studies are advised before embarking on a prolonged course of therapy. Again, in this chapter, details of diagnosis and treatment are lacking so that from a practical viewpoint it is not entirely satisfactory.

T. Waters has a useful chapter on the various medicolegal aspects of the pneumoconioses and present legislation under Workman's Compensation laws (the provisions of which vary from state to state).

In the chapter on silicosis the x-ray classification is noted but the only films reproduced are those of one case of *advanced* silicotuberculosis. It would be of more value if the "early," uncomplicated roentgen changes were shown and discussed.

K. Smith presents films of the "three stages" of asbestosis, and of the mixed dust pneumoconioses, and gives an interesting background on the development of the disease. He has had experience in the asbestos industry for over 18 years.

There is an interesting chapter on pneumoconiosis from diatomaceous earth which is of some importance in Southern California, where large deposits of this earth are mined and processed.

The subject covered most completely is berylliosis (by V. van Ordstrand). There are illustrations of the skin changes, chest x-rays, photomicrographs and patch tests in this disorder.

The book provides a good general background on the subject, some chapters being less comprehensive than others. Internists, general practitioners and students should find it useful.

M. E. MOTTRAM, M.D.

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**ENDOCRINE AND METABOLIC ASPECTS OF GYNECOLOGY**—Joseph Rogers, M.D., Associate Professor of Medicine and Lecturer in Gynecology and Obstetrics, Tufts University School of Medicine; Physician, Pratt Clinic—New England Center Hospital. W. B. Saunders Company, Philadelphia, Pa., 1963. 189 pages, \$8.00.

Doctor Joseph Rogers, an internist who according to his preface has been warmly received into the circle of obstetrician-gynecologists, is the author of a concise yet thorough and thoroughly readable review of gynecologic endocrinology entitled *Endocrine and Metabolic Aspects of Gynecology*. The material is presented in a logical scientific fashion. Frequent references are made to more complete reviews and monographs and bibliographies at the end of each of the twelve chapters are complete and up to date.

Three chapters are particularly notable. The chapter on menstruation and systemic disorders contains a compendium of the physiologic and biochemical changes which have been found to be associated with the menstrual cycle. The chapter on chromosomal aberrations and gonadal defects and that on ovulation induction and control are excellent summaries of topics of great current interest and rapid change. The remaining chapters deal competently with topics common to other gynecologic texts, menstrual disorders and infertility.

It is to the author's credit that, although adequately discussing clinical management, he has avoided the cook-book style of several recent publications on the same subject. It is hoped, however, that for the benefit of students future editions of the book will contain more illustrations and tables. In addition, a more complete and critical appraisal of the new progestins could well be included in a book of this type. Overall, *Endocrine and Metabolic Aspects of Gynecology* is a book which can be highly recommended to any physician, student or seasoned specialist who is confronted with the problems of women and their menses.

EMMET J. LAMB, M.D.

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**STRECKER'S FUNDAMENTALS OF PSYCHIATRY**—Sixth Edition—Revised by Manuel M. Pearson, M.D., Associate Professor, University of Pennsylvania School of Medicine and Graduate School of Medicine; Chief of University of Pennsylvania Section, Psychiatric Department, Philadelphia General Hospital; Psychiatrist, Institute of the Pennsylvania Hospital; Consultant, Valley Forge Army Hospital. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1963. 274 pages, \$6.75.

This represents the 6th edition of a textbook in psychiatry which has enjoyed wide popularity. It follows Dr. Strecker's original purpose, namely to provide certain general and fundamental psychiatric principles for medical students and for non-psychiatric medical practitioners.



The current edition attempts to bring the material more up to date with new chapters on drug therapy, psychodynamics, personality disorders, and mental deficiency. The chapter on classification of mental diseases has also been revised in keeping with the more current classification of mental disorders. A separate chapter is devoted to each major subdivision of mental illness as these are outlined in the American Psychiatric Association classification of mental disorders. There are, in addition, chapters on The Nurse and the Psychiatric Patient, Organic Therapy, Psychotherapy, and Psychiatry in War. Unfortunately missing were chapters on Psychiatry and the Law, Social Psychiatry, and Child Psychiatry.

The extensive revision from the previous text, which appeared in 1952, is evidence of the many changes which have occurred in psychiatry. This volume presents a broad, and rather general, view of the field of psychiatry. Although it does not attempt to present original data or concepts, it should prove of interest to physicians in fields other than psychiatry, who are interested in current psychiatric concepts and treatment approaches.

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**EVALUATION OF THYROID AND PARATHYROID FUNCTIONS**—Proceedings of the Third Applied Seminar of the Association of Clinical Scientists. Edited by F. William Sunderman, M.D., Ph.D., Sc.D., Director, Division of Metabolic Research and Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.; and F. William Sunderman, Jr., M.D., Instructor in Medicine, Jefferson Medical College, Philadelphia; Consultant in Clinical Pathology, Harrisburg Hospital, Harrisburg, Pa., and City of Kingston Laboratory, Kingston, N. Y. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1963. 292 pages, \$12.50.

The chief value of this published seminar lies in the many detailed laboratory techniques described with frank mention of the common sources of error. Progress is so rapid in the investigation of thyroid and parathyroid function that this type of book, published hot from the conference table, serves a real purpose for other investigators. Typical topics in this one are chromatography of thyroid hormones, measurement of thyroxin-binding of plasma, ultrastructure of the parathyroids, and the many various ways of measuring serum calcium with the virtues and defects of each. The editors have done a good job of organizing and packaging this up-to-date material.

JEROLD M. LOWENSTEIN, M.D.

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**NEURORADIOLOGY WORKSHOP—Volume II: Intracranial Tumors Other Than Meningiomas**—Leo M. Davidoff, M.D., Active Consultant Neurosurgeon, Montefiore Hospital; Professor and Chairman, Department of Neurosurgery, Albert Einstein College of Medicine, Yeshiva University, New York; Harold G. Jacobson, M.D., Chief, Division of Diagnostic Radiology, Montefiore Hospital; Professor of Clinical Radiology, New York University School of Medicine, New York; and Harry M. Zimmerman, M.D., Chief, Division of Laboratories, Montefiore Hospital; Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 402 pages, \$22.50.

Following a short introduction dealing with the incidence, classification, pathology and certain other aspects of primary brain tumors, there is a series of nine chapters which consist essentially of case presentations. Each case is discussed by members of the radiological, neurological and neurosurgical staffs at Montefiore Hospital. The discussion includes interpretation of the roentgenograms, the clinical signs and symptoms, and subsequently the operative findings and gross and microscopic pathological data. Each case is illustrated by multiple roentgenograms, many with contrast studies. Discussion also includes differential diagnosis.

Nine cases of glioblastoma multiforme in different locations are summarized. Six cases of astrocytoma. Seven cases of other types of glioma. Ten cases of metastatic neoplasm, epitheliomatous, melanomatous or lymphomatous. Two cases of neurinoma. Five pituitary adenomas and one cranio-pharyngioma. There is a short chapter on cysts and one on hemangioblastomas. Since the text is in conference form it is quite easy to read and should be of particular value to the radiologist and the neurologic physician or surgeon. However, in only a few cases is other than surgical therapy discussed, and there is practically no discussion on *prognosis*. We believe that the case presentations would be enhanced if such were added to the next edition, and if the subsequent course of the patients could be described.

M. E. MOTTRAM, M.D.

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**HEART-LUNG BYPASS—Principles and Techniques of Extracorporeal Circulation**—Pierre M. Galletti, M.D., Ph.D., Assistant Professor of Physiology, Department of Physiology, Division of Basic Health Sciences, Schools of Medicine, Dentistry and Nursing, Emory University, Atlanta, Georgia; and Gerhard A. Brecher, M.D., Ph.D., Professor and Chairman of Physiology, Department of Physiology, Division of Basic Health Sciences, Schools of Medicine, Dentistry and Nursing, Emory University, Atlanta, Georgia. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 391 pages, \$14.50.

This is a scholarly summary "of the state of the art" of perfusion for open heart surgery. It amounts to an exhaustive review of the literature with critical comments by the authors. There are any new black and white schematic drawings of circuits and pieces of apparatus. These are simple, clear and, in the main, accurate. The critical judgments of the authors are based on their own considerable experience and on their impressions from the literature and are, generally, sound and helpful. The organization of the book is good and it supplies frequent summaries. It should be useful, both as a reference book for workers in the field and for orientation of newcomers.

JOHN J. OSBORN, M.D.

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**LIPOPROTEIN CHEMISTRY IN HEALTH AND DISEASE**—Ronald L. Searcy, Ph.D., Associate Professor of Pathology, California College of Medicine; Clinical Biochemist and Associate Attending Staff Member Los Angeles County General Hospital (Unit 2), Los Angeles, California; Co-director, Cardiovascular Research Center; Research Associate, Burbank Hospital, Burbank, California; Consultant, Council on Drugs, American Medical Association; and Lois M. Bergquist, M.S., Visiting Assistant Professor of Pathology, California College of Medicine, Los Angeles, California; Instructor of Biological Sciences, Los Angeles Valley College, Van Nuys, California; Research Associate, Cardiovascular Research Center, Burbank, California. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Ill., 1962. 197 pages, \$8.00.

The book summarizes a large amount of information pertinent to the overall matter of plasma lipids, their transport; in a very limited way their metabolism; and their relationship to atherogenesis. The subject matter is by no means treated exhaustively. The reference material fails to include some important contributions, and in some places is quite superficial.

The use of the term "atherosclerotic hyperlipemia" in the final chapter represents an odd choice of words, and one which could very well be eliminated in later editions.

Despite its limitations, the authors consider many controversial areas sensibly and objectively. The book can to good advantage become part of the library of the clinician with an interest in lipid metabolism.

LAURANCE W. KINSELL, M.D.



**BIOMECHANICS OF HUMAN MOTION**—Marian Williams, Ph.D., Associate Professor of Physical Therapy, Department of Allied Medical Sciences, and Assistant Professor, Department of Anatomy, Stanford University School of Medicine, Stanford; and Herbert R. Lissner, Chairman of the Department and Professor of Engineering Mechanics, and Coordinator of Biomechanics Research Center, Wayne State University, Detroit. W. B. Saunders Company, Philadelphia, Pa., 1962. 147 pages, illustrated, \$5.50.

The authors of this text state that they are primarily concerned with techniques of analysis in the field of biomechanical problems. This concise book presents the physical and mathematical methods and principles relevant to the subject of biomechanics. Information is offered in a logical, clear, stepwise fashion. Interest is enhanced by the skillful and liberal use of diagrams of human anatomy to illustrate important points. Formulas for the resolution of problems are explained and followed by examples of their application to specific problems. Most of the chapters contain a section entitled, "Examples from the Literature." In these sections, portions of other writings are reported. Usually such references are examples of clinical applications of the subject matter under analysis in the next. A helpful glossary is included as well as a table of common Logarithms and Natural Trigonometric Functions.

The first chapter deals with some of the basic physical concepts including Sir Isaac Newton's first and third laws; in the next chapter, other elementary terms and concepts in the science of physics are clearly described and illustrated with examples of body mechanics. The remainder of the text deals with a detailed algebraic and graphic analysis of: (a) Linear Force Systems, (b) Parallel Forces, (c) Composition and Resolution of Forces, (d) Concurrent and General Force Systems and (e) Friction. A chapter is devoted to each of the above subjects.

Although the book deals primarily with methods of analysis of human mechanics, there are interesting passages that draw clinical attention. In consideration of the concept of "moment of force," the mechanical principle for the rationale of Steindler's flexor origin transfer to improve force of elbow flexion is demonstrated. Russell's traction apparatus for treatment of a fractured femur is used in a problem involving a graphic vector analysis. In the chapter on "General Force Systems" there are stepwise calculations that lead to such pertinent and interesting data as the fact that: a 200 pound man standing on one foot places a force of 475 lbs. on the supporting femoral head, and that with 100 lbs. in the left hand with the man standing on the right foot 1,174 lbs. of force is exerted on the right femoral head.

To whom does the reviewer recommend this book? First and foremost, to the investigator in the field of biomechanics. The advantages to such an individual are: its competent presentation of the basic science of physics applicable to human mechanics, its value as a handbook in methods of research and the resolution of specific mechanic problems, and finally its usefulness as a bibliography. For the physical therapist, the doctor of physical medicine and the orthopedic surgeon it has certain values. Besides revitalizing some of those Betz cells that have been relatively inactive since their participation in the college physics course that was required for professional school, this book facilitates their making some contribution in the clinical problems faced by their owners. The clinician who reads this book will most probably be more sensitive to the numerous complexities of stresses and forces functioning in the man machine.

There is little room for disagreement on the scientific physical laws and the mathematics presented. The authors

themselves describe the limitations of the applicability of these laws to the human body.

In summary, this well written and excellently illustrated text is a useful contribution to our scientific literature.

A. A. WHITE, M.D.

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**CLINICAL GENODERMATOLOGY**—Thomas Butterworth, A.B., M.D., Med.Sc.M., Assistant Professor of Dermatology, Graduate School of Medicine, University of Pennsylvania; Chief, Department of Dermatology, Pennhurst State School, The Reading Hospital; Consultant in Dermatology, Berks County Tuberculosis Sanatorium, Pottstown Hospital, Wernersville State Hospital; and Lyon P. Streat, D.D.S., M.Sc., Ph.D., F.A.P.H.A., F.A.A.S.A., Consultant in Oral Medicine, Pennhurst State School, Montgomery Hospital, Norristown State Hospital; Consultant in Research, American Society of Oral Surgeons; Clinical Instructor, Department of Medicine, Hahnemann Medical College and Hospital. Introduction by James E. Wright, Jr., Ph.D., Professor of Genetics, The Pennsylvania State University. The Williams & Wilkins Company, Baltimore 2, Maryland, 1962. 221 pages, \$13.50.

In their Preface the authors state that "Clinical Genodermatology" is intended to present the various dermatologic and mucocutaneous conditions which may be found in an individual as a result of an inherited dominant or recessive gene, or due to a variation in the number of chromosomes. It represents the teamwork of a dermatologist of over 30 years experience in clinical practice and teaching and that of a research worker in the basic sciences including bacteriology, endocrinology and various aspects of mucocutaneous disease. Much of the information is based on observations made over a period of many years at Pennhurst State School in Pennsylvania where there are hundreds of patients with various congenital abnormalities. The writings of others were also considered and a bibliography is presented in the text at the end of the discussion of each disease.

Some of the problems included are not primarily dermatologic. They are included because many of them have some cutaneous manifestations which may prove of real diagnostic value in clinical practice.

The subject matter is classified as far as possible in accordance with the presenting symptoms inasmuch as a classification based on etiology is not feasible in our present state of knowledge.

In the Introduction, James E. Wright, Jr., Professor of Genetics at Pennsylvania State University, reviews the principles of genetics.

The text covers 207 pages, 7 by 10 inches, and is printed two columns to a page. It is divided into 14 chapters, as follows: I. Pigmentary Disturbances; II. Disturbances of Keratinization; III. Hyperplasias, Aplasias, and Atrophies; IV. Bullous Eruptions; V. Dyselastoses; VI. Hair; VII. Nails; VIII. Neurocutaneous Syndromes; IX. Diseases of the Blood and Lymph Vessels; X. The Congenital Anemias, Dysproteinemia and Methemoglobinemia; XI. Oral Mucosal Lesions; XII. Tumors, Cysts, and Nevi; XIII. Metabolic Disturbances; XIV. Diseases of Unknown or Doubtful Origin. 130 different diseases and syndromes are discussed.

In each condition the material is presented wherever possible under the headings of Synonyms, Definition, Occurrence, Symptoms, Variations, Complications, Etiology, Inheritance, Prognosis, Differential Diagnosis, Pathology and Treatment. This organization makes for easy reference. The amount of information detailed, however, is much more than an outline. The word pictures of symptoms and signs are excellent and reading is easy and pleasant.

There are numerous helpful photographs, all in black and white.

The book is well indexed.



Some of the entities discussed are common but many are rare. Aside from the hereditary aspects this book gives a concise description and summary of all that is known of them. I find it most interesting and worth while and believe that not only dermatologists but all physicians and students and others in medical and related fields will also find it so.

HERMAN V. ALLINGTON, M.D.

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**AN ATLAS OF HUMAN ANATOMY—Second Edition**—Barry J. Anson, Ph.D. (Med.Sc.), Robert Laughlin Rea Professor, Emeritus, Department of Anatomy, Northwestern University Medical School, Chicago; Research Professor, Department of Otolaryngology and Maxillofacial Surgery, College of Medicine, State University of Iowa, Iowa City; Visiting Professor of Otolologic Anatomy, Department of Surgery, University of California, Los Angeles; and formerly, National Research Council Fellow in Medicine, Harvard Medical School, Boston. W. B. Saunders Company, Philadelphia, Pa., 1963. 632 pages, \$18.00.

The feature which has distinguished Professor Anson's *Atlas of Human Anatomy*, ever since its first issuance a dozen years ago, has been the insistence upon the nature and degree of anatomical variation in the organ, nerve, muscular and vascular pattern of the human body. His purpose, said the author in the first edition, was to prepare an atlas of serial dissections and to exhibit statistically the natural occurrence of variation so that individual observations would find their place as predictable elements in the exposure of the parts. In this way over-simplified and stereotyped concepts of human morphology would be avoided.

These principles have been maintained and extended in this, the second edition, of the atlas. The statistical information in variation has been brought up to date, and frequently the data condensed by reduction to a single plate. Although it is stated that no less than 150 new illustrations have been provided, by and large the instructional plates remain much the same but some have been reduced or increased in size or re-arranged in a series. However, there is little doubt that the new edition is a solid improvement over its predecessor. A pleasing feature is the inclusion of plates derived from John Warren, Harvard's distinguished professor of anatomy, in the production of which the author had a hand. Throughout, the plates have maintained in general the same high quality of reproduction found in the first edition, although there are a few which are dull and flat (e.g. pp. 346, 465, 484, 485, 600, 612) which may be due to unevenness in printing as evidenced by the same illustration on pp. 437 and 549, in which the latter is quite inferior in the reviewer's copy.

The reviewer wonders why it was found necessary to illustrate the findings in the dead of the position of the hollow viscera and such things as the shape of the stomach. In view of the dynamics of the alimentary tract these matters are surely better illustrated from radiograms in the living. Incidentally, the total absence of radiograms should be noted. Likewise, some of the dynamic features of muscle action and motion are not very well done and are perhaps unnecessary. A few other minor blemishes were observed, such as the failure to recognize that the foramen caecum is truly "blind" in most instances and does not usually transmit an emissary vein, as shown by Boyd many years ago. However, such criticisms are minor and express differences of opinion.

The atlas is an excellent one and unique in its conception. The medical student, the physician, and especially the surgeon, will find that this uniqueness provides him with a reference tool of first importance.

J. B. DEC. M. SAUNDERS, M.D.

**CLINICAL AND EXPERIMENTAL HYPNOSIS—In Medicine, Dentistry and Psychology**—William S. Kroger, M.D., formerly Associate Professor of Obstetrics and Gynecology, Chicago Medical School; Past President, The Academy of Psychosomatic Medicine; Advisory Editor, International Journal of Clinical & Experimental Hypnosis, Journal of Psychosomatics, and Western Journal of Surgery, Obstetrics and Gynecology; Fellow, International Society for Clinical & Experimental Hypnosis, American Society of Clinical Hypnosis; Board of Directors, Institute for Research in Hypnosis, New York. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1963. 361 pages, \$12.50.

This book, the latest in a spate of books on this subject which have crossed the reviewer's desk, seems, alas, to have all the defects of the preceding ones and to remedy none of the evils. In its merit, is the clear exposition of the methods and techniques of hypnotic induction and the areas of its employment. This is done in a lucid and fairly complete fashion. This is hardly, however, of any advantage to science. Each book on hypnosis seems to do this quite well and none of them, in the reviewer's opinion, equal, in terse and explicit lucidity, a light pamphlet entitled "Hypnosis in 20 Easy Lessons," published by an unknown author some time around the turn of the century which costs 25 cents, is printed on cheap, pulp paper, and can be found in any sex bookstore.

The author of this book, like so many others in the field, seemed neither challenged, interested, nor knowledgeable about the many answered theoretical questions raised by hypnosis. It is clear that hypnosis is a complex symbol, in itself, in the unconscious mind and, in consequence, there are decided disadvantages, risks, and contraindications to its use. These, as is usually the case, have the barest of mention.

In the opinion of the reviewer, the shortcomings of the book reflect the fact that the author has not had any thorough training in psychiatry or in the theory of personality formation. His interest in hypnosis appears to have developed in the framework of his obstetric-gynecological practice and while his zealous application to the practical techniques of hypnosis is altogether commendable, the avoidance of the many theoretical problems which it raises is unfortunate. This approach no doubt reflects the author's very simplistic view of neuroses. In his preface, he states that his primary approach is to deal with what a psychiatrist would call the secondary gains of illness; i.e., helping the patient to understand the need that he has for the symptom. The author is "convinced that the neuroses and functional psychoses are due to disturbed cortical dynamics following continued stress rather than to unconscious conflicts."

It is difficult to reconcile this oversimplistic conception of psychological illness with the diversity and scope of mental life as seen in clinical practice.

A really good book on hypnosis remains yet to be written.

C. W. WAHL, M.D.

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**BILHARZIASIS—Ciba Foundation Symposium**, held in commemoration of Theodore Maximilian Bilharz. Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maevae O'Connor, B.A. Little, Brown and Company, Boston 6, Mass., 1962. 433 pages, with 46 illustrations, \$11.50.

This book is the published account of a symposium held in Cairo, Egypt, on March 18-22, 1962 in commemoration of the centenary of the death of Dr. Theodore Bilharz, who discovered the trematode worm in 1851, a species that causes schistosomiasis in Egypt. The text of the book contains a series of papers by invited investigators on parasites causing schistosomiasis, their vectors, pathogenesis, host response, treatment and methods of controlling the disease.



In addition to presentation by investigators, the attributes of this volume include pertinent observations and discussion after presented blocks of papers and summaries and recommendations for future laboratory, clinical and field research.

It is interesting to compare the contents of this volume, published in 1962, with a volume on "Schistosomiasis" published (John Bale, Sons and Danielson, Ltd., London), in 1934 by an Egyptian physician, Dr. Ramesis Girges. Even though an interval of approximately thirty years has elapsed between the two publications, schistosomiasis remains a major medical and public health problem with no available satisfactory drug for treatment and great difficulties in diagnosis and control of the infection. Consequently, the present volume is recommended to those who wish to be brought up-to-date about the current status of our knowledge and research with these widespread tropical infections, with the hope that the volume will stimulate and intensify laboratory, clinical and field research with this important group of human diseases. Great gaps in our knowledge about the pathogenesis of the disease were pointed out, but no sections on laboratory diagnosis were included in the symposium. On a world-wide basis, this disease is of great medical importance but, except for schistome dermatitis, which can occur in the U.S.A., the infection is primarily of interest to clinicians in the region of New York City, who seek to diagnose infections in native-born Puerto Ricans who have migrated to this country or in patients who came here from such endemic areas as the Nile River Valley, new endemic areas of the Middle East and the Philippine Islands. Fortunately, the required species of snails, as intermediate hosts of human schistosomes, are lacking in this country to complete the life cycle and effect transmission to our native born population.

QUENTIN M. GEIMAN, Ph.D.

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**CLINICAL MANUAL OF ORTHOPEDIC TRACTION TECHNIQUES**—Gerhard Schmeisser, Jr., M.D., Chief of Orthopedic Surgery, Baltimore City Hospitals; Assistant Professor of Orthopedic Surgery, Johns Hopkins University School of Medicine. Illustrated by Robert Kern. W. B. Saunders Company, Philadelphia, Pa., 1963. 60 pages, \$4.50.

Any individual who has been directly or indirectly involved in the establishment and maintenance of a correct orthopedic traction device would upon undertaking to review Dr. Schmeisser's manual be faced with a problem. The problem would be that of controlling his enthusiasm and gratitude to such an extent that an objective appraisal of the manual could be made. The reviewer is confident that a great number of students as well as professional and non-professional members of the hospital team will find this book to be of immeasurable value in their day to day work and education.

The first part of the book presents traction in terms of its prospective in orthopedic therapeutics. The value, limitations and complications of traction are also briefly mentioned. A discussion of the importance of exercise and the principles of traction therapy complete the conceptual considerations. Practical topics of equipment, knot-tying and encircling devices are then dealt with.

The remainder of the book concerns itself with the standard forms of traction and their variations. It is divided into skin traction techniques and skeletal traction techniques. In each section there is discussion of the general principles involved in the particular technique. This is followed by detailed explanation of many individual traction set ups. Let us take, as an example, the section on "Dunlop's Traction for Transcondylar and Supracondylar Fractures of the Humerus in Children": the following was presented; a com-

plete diagram of the traction as established, a list of all equipment necessary to establish it, the clinical value and limitations of the device, the precautions that should accompany its employment, useful variations and refinements, and finally a diagram demonstrating post traction immobilization.

The part on skeletal traction provides the same detailed technical information along with basic considerations where they are relevant. This section is highlighted by a sound presentation of the clinical use of Kirschner wires and Steinmann pins. Included in this division is a presentation of important anatomic landmarks for inserting apparatus for skeletal traction. There are some admirable characteristics of this book which are not made evident by a listing of its contents. The illustrations are superb and, themselves, are frequently adequate explanation for one to establish the traction. The subject matter is presented in a clear, concise, stepwise manner. Most problems are anticipated, and instructions for their prevention or resolution provided. The book is spiced with many "pearls," which are most helpful and sometimes, unfortunately, only learned by the less enjoyable process of trial and error. Significant considerations dealing with nursing problems and patient comfort are also given adequate attention.

This book is written as a brief functional manual and does not, by any means, include all traction arrangements. A good bibliography is presented for the reader interested in further study in the topics involved. There is, of course, room for disagreement about the plans of management of some of the fractures; however, these are not presented in a dogmatic fashion.

This book has a great value in its practical effectiveness as a clinical manual; it will also be of considerable worth as a teaching aid. The reviewer is impressed with its potential as a tool of communication between doctors, nurses and central supply personnel. By referring to the numbered illustrations, with their lists of required equipment, when ordering traction apparatus all persons involved could know precisely what is requested. This would alleviate the all too familiar problem of not having the proper materials for the desired traction. Because of its practical effectiveness, significant education usefulness, this book is a distinct contribution to clinical orthopedics.

AUGUST WHITE, M.D.

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**CLINICAL DISORDERS OF FLUID AND ELECTROLYTE METABOLISM**—Edited by Morton H. Maxwell, M.D., Associate Clinical Professor of Medicine, University of California (Los Angeles) School of Medicine; Attending Specialist in Medicine, Veterans Administration Center, Los Angeles; and Charles R. Kleeman, M.D., Chief of Medicine, Mount Sinai Hospital; Associate Professor of Medicine, University of California (Los Angeles) School of Medicine. The Blakiston Division, McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, N. Y., 1962. 512 pages, \$16.00.

The growing importance of disorders in electrolyte metabolism in all branches of clinical medicine has led to an increasing number of texts on this subject. Two multi-authored volumes have now appeared which in itself attests to the growing complexity of this field. One of these is Clinical Disorders of Fluid and Electrolyte Metabolism edited by M. H. Maxwell and C. R. Kleeman. The purpose of this work, as stated by the editors, is to provide "a practical working knowledge . . . for every practicing physician." The topics covered, in line with the aim of achieving general usefulness, are: (1) basic physiological principles, (2) renal disorders (acute and chronic), (3) endocrine mediated disorders, (4) edematous states, and (5) disorders seen in obstetrical and pediatric practices. Although a wide range



of subjects is covered, the absence of chapters on the pathogenesis and treatment of dehydration and on the electrolyte disturbances in surgical patients limits its over-all value. Despite this shortcoming and the unevenness in style and depth of treatment of the individual topics (inevitable in multi-authored texts), this is an important contribution to teaching in this area. The authors are all respected authorities in their field, the documentation is fairly complete, and considerable effort has been made to relate the physiological findings to the most prominent problems faced by clinicians. Without doubt, this text will be used widely, and for the most part successfully, by practicing physicians as well as by medical students for the next two or three years at least. All texts on electrolyte disorders have a short half-life, owing to the high rate of publication of new research findings. It is to be hoped that the authors will expand and periodically modernize this work, since it is of considerable value for teaching at the pre-doctoral as well as the post-doctoral level.

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**MEDICAL LABORATORY TECHNOLOGY**—Matthew J. Lynch, M.D. (N.U.I.), M.R.C.P. (Lond.), F.C.A.P., Pathologist, The General Hospital, The Sudbury Memorial Hospital, The Sudbury-Algonia Sanatorium, Sudbury, Ontario; Consultant Pathologist to the International Nickel Company of Canada; Regional Pathologist for District of Sudbury, Ontario, Department of Justice; Stanley S. Raphael, M.B., B.S., (Lond.), Pathologist, The Sudbury Memorial Hospital, Sudbury, Ontario, Canada; Leslie D. Mellor, L.C.S.L.T., F.I.M.L.T., Member, Canadian Society for Clinical Chemistry, Chief Technologist, and Specialist Technologist in Biochemistry, The General Hospital, Sudbury, Ontario, Canada; Peter D. Spare, F.I.M.L.T., Member, Canadian Society for Clinical Chemistry, Chief Technologist, and Specialist Technologist in Biochemistry, Sudbury Memorial Hospital; Peter Hills, L.C.S.L.T., F.R.M.S., Senior Technologist, and Specialist Technologist in Bacteriology and Histology, The General Hospital, Sudbury, Ontario, Canada; and Martin J. H. Inwood, L.C.S.L.T., F.I.M.L.T., Senior Technologist, and Specialist Technologist in Hematology and Blood Bank, The General Hospital, Sudbury, Ontario, Canada; Member, American Association of Blood Banks. W. B. Saunders Company, Philadelphia, Pa., 1963. 735 pages, \$12.00.

The authors of this book indicate in the preface that their aim has been to give workers in their field a book that is up to date and covers the vast bulk of investigative demands encountered in the average general hospital, yet one which outlines not only the "how" but also the "why" of laboratory work. In the opinion of this reviewer, they have accomplished this assignment exceedingly well. The book is divided into four sections. Section One begins with a concise but adequate review of the basic principles of laboratory work and of general and analytical chemistry. There follow chapters on tests of kidney function including routine urinalyses as well as special tests performed for chemical constituents which may appear in the urine. The various chemical tests applicable to studies of the gastrointestinal tract, liver and biliary systems are next described. This section is concluded with descriptions of a number of important biochemical tests commonly used in diagnosis, as well as the special studies applicable to investigation of endocrine functions.

Section Two is devoted to hematology including not only morphological studies but also the parasites which may be detected in the blood, blood coagulation and disorders of hemostasis, blood grouping, and blood bank methods. Section Three covers the field of diagnostic microbiology, with limited attention to serological tests, antibiotic sensitivity procedures, parasitology and mycology. The final Section, Four, deals with histologic techniques including preparation of tissues, staining for special purposes, and cytologic diagnosis.

Each chapter is supplied with a useful and up to date list of references for further reading. This preserves the quick reference feature of a laboratory text to be consulted for a concise treatment of the problem at hand. The book is printed in double column format by an offset process which is most satisfactory and because of the somewhat larger than usual type, easily read. Because of its good coverage of the field of laboratory investigation and its content of modern and reliable procedures, this book is recommended as a reference source for any hospital laboratory.

HAROLD A. HARPER, Ph.D.

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**COUNSELING IN MEDICAL GENETICS**—Second Edition—Sheldon C. Reed, Ph.D., Director, Dight Institute for Human Genetics, The University of Minnesota. W. B. Saunders Company, Philadelphia, Pa., 1963. 278 pages, \$5.50.

This book of modest size, now in its second edition, is designed to help the obstetrician, the pediatrician, the internist, and above all the family physician meet problems of family planning that may be placed before him. For this, he should have some familiarity with genetics, a field in which great advances have been made in the last few years, particularly in chromosome analysis, and the recognition of the chemical basis of several inborn errors of metabolism. The number of conditions in which heredity plays a major part is surprisingly large—the author lists over 300. Patients frequently seek counsel from the physician as to the chances of some anomaly or other condition which may have occurred in an ancestor or collateral relative appearing in their future offspring, and Reed approaches such problems in an orderly way, grouping them in some 28 categories, and giving specific examples of advice given. There is also an interesting discussion of disputed paternity.

The author, Sheldon C. Reed, is Director of the Dight Institute for Human Genetics of the University of Minnesota. The need for such organizations is well shown by the fact that the eight years since the first edition was published the number of such American institutes for genetic counseling has increased from 13 to 28.

The book is well written, with clear expositions of the basic material. It should be extremely useful to the physician who is not expert in the field but who wishes at least to guide his patients in the preliminary steps toward solving their problems.

\* \* \*

**PREVENTIVE PEDIATRICS**—Child Health and Development—Paul A. Harper, Professor of Maternal and Child Health, The Johns Hopkins University School of Hygiene and Public Health, and Associate Professor of Pediatrics, The Johns Hopkins University School of Medicine, Baltimore, Maryland. Appleton-Century-Crofts (Division of Meredith Publishing Company), 34 West 33rd Street, New York 1, N. Y., 1962. 798 pages, \$14.95.

Dr. Harper has written a comprehensive textbook which might equally well bear the title "Growth, Development and Public Health Care of Children." The reviewer knows of no other text which, in one volume, covers as thoroughly and authoritatively the fields of normal growth and development, nutritional requirements, well baby and well child care, mental retardation and other handicaps and public programs for the well and handicapped child. The first chapter of 76 pages entitled "Predictable Problems of Growth and Behavior" deals almost entirely with common behavior problems and is excellent.

Throughout the book there are comprehensive and up-to-date references. The book is recommended for use by pediatricians, public health personnel and all others engaged in health services for children.

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\*Mintz, A. A.: Antibiot. Med. Clin. Ther. 7:481, 1960.

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## REFERENCES AND REVIEWS

LEGAL LIMITS ON HUMAN EXPERIMENTATION—W. Louisell.  
Arch. Environ. Health, 6:784 (June) 1963.

The Anglo-American common law, concerning experimentation on human beings for scientific purposes, has developed in the context of problems of medical malpractice. This in part explains its limited development. Uncertainties that may exist as to the legality of experimentation are perhaps more socially desirable than premature crystallization of legal dogma. Generally, an experiment—which is neither morally reprehensible nor violative of statute, and which is legitimate according to informed medical opinion, having as subject a competent adult person who knowingly and voluntarily consents after full explanation—will incur neither criminal nor civil liability. But the treating physician must be especially careful not to subordinate his patient's personal interests to interests of scientific experimentation, however laudable in themselves. Beyond further development of the concept of civil liability for fault, only by our case-by-case method is there a possibility of substituting a social insurance principle to compensate all victims of experimentation, for the economic burden to be borne by the experimenter, e.g., the government.

\* \* \*

HISTORY OF WORLD FEDERATION OF ANESTHESIOLOGISTS—  
H. R. Griffith. Anesth. Analg., 42:389 (May-June) 1963.

The World Federation of Societies of Anesthesiologists, founded in Holland in 1955, and affiliated with the World Health Organization (WHO) and Council for International

Organizations of Medical Sciences (CIOMS), is now recognized as an official body to represent anesthesiology throughout the world. This article records details of its conception, organization and growth. Its purpose is "better anesthesia for more people everywhere." National societies of 34 countries comprise the federation.

\* \* \*

EVALUATION OF TREATMENT OF HYPERTENSION ASSOCIATED WITH OCCLUSIVE RENAL ARTERIAL DISEASE—H. P. Dustan, I. H. Page, E. F. Poutasse and L. Wilson. Circulation, 27:1018 (June) 1963.

Of 131 patients with hypertension and renal arterial stenosis, 99 were treated surgically and 32 medically. Results of surgical treatment were analyzed in 76 patients who were followed-up for 1 to 6 years postoperatively. Diastolic hypertension remitted in 47 patients, was lessened in 12, and unchanged in 17. There were 10 postoperative deaths; 12 patients died later, 11 of atherosclerosis. Of the 32 not operated upon diastolic hypertension remitted spontaneously in 3, and was controlled at normal levels with drugs in 11; 18 patients have persistent diastolic hypertension; 13 of these have been inadequately treated with drugs. Ten patients have died of atherosclerosis; 9 were among those with poor blood pressure control.

\* \* \*

RATE OF GROWTH AND APPARENT DURATION OF UNTREATED PRIMARY BRONCHIAL CARCINOMA—L. H. Garland, W. Coulson and E. Wollin. Cancer, 16:694 (June) 1963.

A series of 41 patients with untreated primary peripheral bronchial carcinoma is reported. Serial roentgenograms made over months or years permitted determination of the rate of growth of these tumors during their visible or clinical phase. The estimated duration back to 1-cell size was then calculated. For squamous cell carcinomas the average duration from 1-cell size to a tumor 2 cm in diameter was found to be approximately 9 years, and for adenocarcinomas approximately 25 years.

\* \* \*

BIOCHEMICAL AND ELECTRON MICROSCOPE STUDY OF PRESERVED ERYTHROCYTES—A. Rimón, S. Rimón and D. Danon. Transfusion, 3:161 (May-June) 1963.

The age-population distribution of erythrocytes (RBC) estimated by the ultrastructure of RBC membranes prepared by gradual osmotic hemolysis was studied during storage in parallel with biochemical changes characteristic of storage lesion. Loss of cholesterol and phospholipids, decrease in diphosphoglyceric acid, delayed decrease of adenosine triphosphate, together with increase in inorganic phosphate, indicated typical storage lesion; no significant modification, however, in the proportion of structurally old RBC was found. It is concluded that storage lesion cannot be morphologically identified with physiological aging of RBC from the electron microscopic point of view.

\* \* \*

A COMBINED HEMOGLOBIN—HEMOSIDERIN STAIN—H. Puchler and F. Sweat. Arch. Path., 75:588 (June) 1963.

The amidoblack stain for hemoglobin was modified to permit simultaneous demonstration of hemoglobin and hemosiderin in contrasting colors. Paraffin sections, fixed or mordanted in Zenker-formol, were treated consecutively with the Prussian blue reaction for iron, tannic acid, phosphomolybdic acid, and phloxine B. Hemosiderin is colored blue; erythrocytes, hemoglobin casts and intracellular hemoglobin droplets are colored red, and all other tissue structures are colored yellow. The selectivity of the method for hemoglobin was demonstrated in model experiments. This technic does not permit distinction between hemoglobin, methemoglobin and sickle cell hemoglobin.



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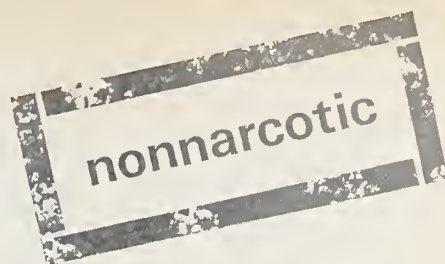
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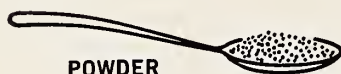


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**References:** 1. Raddin, J. B., and Dowell, L. B.: *Amer. J. Gastroent.* 37:24-40 (January) 1962. 2. Calloway, N. O.: Article to be published. 3. Reichert, J. L.: *Pediat. Clin. N. Amer.* 2:527-538 (May) 1955. 4. Hootnick, H. L.: *J. Amer. Geriat. Soc.* 4:1021-1030 (October) 1956.

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## J.A.M.A. Publishes Editorial on Conference on Analgesics

(Continued from Page 33)

ous effects upon the kidneys of overuse of analgesic drugs."

Offering a word of advice to the general public, Dr. Hugh H. Hussey, director of the A.M.A.'s Division of Scientific Activities, said there should be no cause for concern among those who use non-prescription analgesic drugs in moderation and in accordance with the manufacturer's directions.

## A.M.A. Award to John F. Enders For Scientific Achievement

John F. Enders, Ph.D., Boston, whose pioneering research on viruses led to vaccines against poliomyelitis and measles, received the Scientific Achievement Award of the American Medical Association in June.

The award was established in 1960 for non-physician scientists to be given on special occasions for outstanding work. It was presented to Dr. Enders at the A.M.A.'s annual meeting in Atlantic City during presidential inaugural ceremonies Tuesday night, June 18, at Convention Hall. The award consists of a gold medal.

Dr. Enders, 66, developed relatively simple techniques for growing polio viruses in living tissues which speeded research that resulted in a vaccine. He received the Nobel Prize in 1954 and the Pasano Award in 1953 for his contribution to polio research.

His work in isolating a strain of measles virus and adapting it to different tissue culture systems established the groundwork for future studies directed toward development of either the killed or attenuated measles vaccine.

Born in West Hartford, Conn., Dr. Enders graduated from Yale College in 1919 and later received an M.A. and Ph.D. from Harvard University. He joined the department of bacteriology and immunology of Harvard Medical School in 1929. In 1958 he was made professor of bacteriology and immunology, Harvard Medical School at the Children's Hospital, Boston, and in 1962 became Higgins University Professor of Harvard University, a professorship for distinguished scholars.

He served as Civilian Consultant to the Secretary of War on epidemic diseases between 1942 and 1946, was a member of the World Health Organization Expert Advisory Panel on Virus Diseases in 1958 and as a member of the Panel on Viruses and Cancer, National Advisory Cancer Council, National Institutes of Health, in 1959.

Dr. Enders has received many other awards for his work which includes the publication of more than 150 scientific papers.

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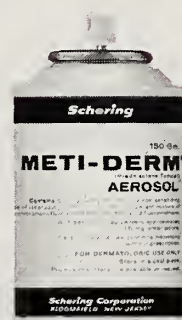
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## New Light Shed on Infant Malady

A generalized hardening of the skin in newborn infants, previously believed to be a fatal disease, recently was termed not a disease in itself but a symptom of some underlying disorder.

In infants who are not hopelessly ill before the skin condition develops, treatment of the underlying problem offers a chance for recovery, according to three University of Minnesota researchers.

A study of 18 infants with the condition showed that 16 had a severe infection, and major heart or gastrointestinal abnormalities were found in nine, Drs. Warren J. Warwick, Herbert D. Ruttenberg and Paul G. Quie, Minneapolis, reported in the June 1 *Journal of the American Medical Association*.

They concluded that the condition, termed sclerema neonatorum, was as nonspecific an indication of disease as fever, labored breathing or dehydration in babies.

Sclerema neonatorum usually affects premature or debilitated infants, the authors said, but may occur in older infants who are suffering from severe disease. The skin of these infants is smooth, cool, tense, mottled purplish, hard, and apparently adheres to the underlying tissue, they said. The process begins in the legs and may spread throughout the body, hindering movement and respiration, they said.

"Our hypothesis is that the underlying disease

or diseases which produce sclerema neonatorum must be diagnosed quickly and adequately so that proper therapy, when instituted, may reverse the disease process and effect recovery," the three physicians said.

"This hypothesis is based on two observations. First, when infants worsened and died despite intensive therapy . . . death was always traceable and ascribable to a specific disease or combination of diseases. Second, when infants recovered . . . improvement appeared in response to treatment specific for a diagnosed disease process."

Seven of the 18 infants survived after developing the skin condition, they said.

## Tuberculin Test Program for TB Cheaper Than X-Ray Surveys

A program of tuberculin tests for infants appears to be a less costly procedure for finding unknown cases of tuberculosis than mass chest x-ray surveys, it was reported in the July 6 *Journal of the American Medical Association*.

The cost of finding an active case of tuberculosis in a tuberculin test program was about \$501 per case while the cost of finding active tuberculosis through the mass x-ray survey technique has been estimated as high as \$1,000 per case, according to an article by William E. Mosher, M.D., A. A. Gra-

(Continued on Page 55)

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## Tuberculin Test Program for TB Cheaper Than X-Ray Surveys

(Continued from Page 50)

bau, M.D., and V. J. Sallak, Ed.D., Buffalo, N. Y.

Their conclusion was based on a tuberculin screening program involving 1,668 children who attended well-child conferences conducted by the health department in the Buffalo area.

"While the experience in testing 1,668 children under two years of age is limited, uncovering new disease among children and their contacts is considerably higher than usually found in mass screening techniques," the authors said.

"The cost of this procedure is relatively low compared with that of x-ray surveys.

"If the well-child conferences are selected carefully in areas of high incidence, it is apparent that this technique is a relatively inexpensive means of discovering active tuberculosis."

Although the major objective of the study was to determine whether screening of infants with the tuberculin test was effective in identifying unknown tuberculosis among adult contacts, the authors said, the study revealed primary tuberculosis among the children themselves.

A diagnosis of primary tuberculosis was confirmed in six of the children studied, they said. Investigation of the contacts of these six and a

suspected case revealed five additional cases of active pulmonary tuberculosis, they said.

The tuberculin test consists of an injection of a liquid containing extracts of the tubercle bacillus which causes tuberculosis. If the disease is present, an inflammation develops at the site of the injection.

The study was made jointly by the Buffalo and Erie County Tuberculosis and Health Association and the Erie County Department of Health. Dr. Mosher is Commissioner of Health and Dr. Grabau is director of the Division of Tuberculosis Control, Erie County Health Department. Dr. Sallak is executive secretary, Buffalo and Erie County Tuberculosis and Health Association.

### RAPID FLUORESCENT SCREENING TEST FOR SKIN MALIGNANCY —M. J. Lipnik, Arch. Derm., 87:575 (May) 1963.

A screening test for rapid identification of malignant and premalignant skin tumors is outlined. The test is based on the observations that a 7 per cent demethylchlortetracycline-0.1 per cent Vitamin B<sub>12</sub> solution, when painted on the skin, fluoresces with a bright yellow-green color when observed with Wood's light. When an acid solution of 4.9 per cent trichloroacetic acid is applied to the fluorescing area, the fluorescence disappears. Benign tumors will follow this pattern. Malignant tumors will retain the yellow-green fluorescence in crusts and granules of the tumor during a 10-second test period. In the series of 266 tumors tested there were 75 classified as malignant or premalignant by other criteria; 68 of these gave a positive result by the test here described. A negative result was obtained in 186 of the 191 tumors classified as benign by other criteria.



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## Blood Fats Elevated in Coronary-Prone Group

Elevated blood fat levels have been found in coronary-prone, highly competitive persons compared with those in low-pressure occupations.

The level of several fats in the blood, including cholesterol, was determined in 10 men displaying competitive behavior and in 10 men who did not exhibit such characteristics in a study reported by Drs. Ray H. Rosenman and Meyer Friedman, San Francisco, in the June 22 *Journal of the American Medical Association*.

"Each of the men in the first group occupied a position not necessarily of top executive character but invariably demanding extreme competitive activity and associated with habitual exposure to deadlines, such as managing and city editors of newspapers and corporate executives directly engaged in highly competitive activities of merchandising or engineering," they said.

This behavior pattern has previously been associated with a high prevalence of coronary disease, they said.

The converse of these criteria were used to select the other 10 men, they said.

"Their occupations, which demanded neither competitive activity nor preoccupation with deadlines, included municipal employment in clerical or ac-

counting duties, embalming, and routine bookkeeping," they said.

The average age, height, and weight of the two groups were closely similar, the physicians said. The overall weekly average of physical activity was not significantly different, they said, and the average daily intake of total calories and various foodstuffs, was closely similar in the two groups.

An analysis of the data revealed that 12 men were considered to have a relatively greater potential to develop coronary disease than the others, the authors said. Of these 12, 9 were in the competitive group, they said. On the other hand, seven men who had the lowest potential were in the noncompetitive group, they said.

The potential for development of coronary disease was based on the assumption that the fats studied are causative factors of the disease, they said.

The authors are affiliated with the Harold Brunn Institute, Mount Zion Hospital and Medical Center, San Francisco.

CENTRAL PONTINE MYELINOLYSIS—K. Berry and J. Olszewski. *Neurology*, 13:531 (June) 1963.

A case of central pontine myelinolysis is described. The pathological lesion corresponded to that of previous cases described in the literature. It is interesting that the lesion developed in the absence of debilitating disease or alcoholism, excluding these conditions as possible etiological factors in this case.

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*References:* (1) Blouin, L., and Overman, R. R.: Detailed reports in Mead Johnson Research Files.\* (2) Gloning, K., and Klausberger, E. M.: *Wien. klin. Wchnschr.* 70:145-149 (Feb. 28) 1958. (3) Whittier, J. R., and Dhrymatis, A. D.: *Angiology* 13:324-327 (July) 1962. (4) Horton, G. E., and Johnson, P. C., Jr.: The Application of Radioisotopes to the Study of Cerebral Blood Flow and the Effects of Isoxsuprine (to be published). (5) Dhrymatis, A. D., and Whittier, J. R.: *Current Therap. Res.* 4:124-129 (April) 1962. \*Available upon request from Mead Johnson Laboratories, Evansville 21, Indiana.

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### American Medical Association Issues Third Annual Therapeutic Number of the Journal

The July 27 issue is the third annual Therapeutic Number of the *Journal* which is devoted primarily to the more pressing problems in the area of drug therapy.

In a review of the work of the American Medical Association Council on Drugs, John R. Lewis, Ph.D., acting secretary, reported that 27 drugs were evaluated in the year ended June 30.

He also reviewed the objectives of the council and described how the council's evaluations of the voluminous data on new drugs are made.

It has been the objective of the A.M.A. council since 1955 to provide information on "all" commercially available new drugs so that physicians can learn whether the effectiveness of the drug has been proved or whether the evidence is inadequate or inconclusive, Dr. Lewis said.

Until recently, he said, the safety rather than the efficacy of a new drug has been the primary criterion considered by the F.D.A. in approving a new drug application. Under the new amendments of the Federal Food, Drug and Cosmetic Act, he said, the F.D.A. now also faces the many difficulties involved in evaluating the effectiveness of new drugs.

To assist the physician in the selection of drugs he prescribes the A.M.A. council periodically issues statements presenting its considered opinion on new

drugs based on available laboratory and clinical evidence. Each evaluation contains information on the actions, uses, adverse effects, suggested dosage, preparations available, and precautions to be taken in its administration.

In some instances the council indicates that the drug is of established value for general use in specified conditions; in other instances that a drug should not be used generally, but only under investigational conditions; and in still others, that there is no rational basis for the drug's use or that there is no conclusive evidence that the drug should be used or is any improvement upon already available drugs, Dr. Lewis said.

The council's opinions are based on the careful evaluation of the evidence by outstanding experts in the field, he said. The A.M.A. maintains a file of more than 1,000 recognized experts in various medical specialties, who are called upon to appraise the data on new drugs, he said.

The first step in the council's procedure of evaluation is to refer all published and unpublished data on a new drug to the appropriate consultants for their views, Dr. Lewis said. Later a member of the council's staff prepares a proposed statement on the drug based on all the evidence plus the opinions of the consultants, he said. Then a member of the council, serving as referee, reviews all the evidence

(Continued on Page 14)

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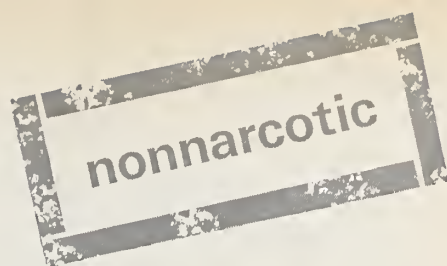
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## Study Ranks Causes Of Leg Swelling

Infections and cancer were the most common causes of leg swelling due to excessive lymph fluid when a lymphatic abnormality was not responsible, a Mayo Clinic study indicated.

Primary lymphedema, leg swelling due to an abnormality of the lymphatic system, affects women predominantly and begins almost always before the age of 40, Drs. Richard D. Smith, John A. Spittell Jr. and Alexander Schirger, Rochester, Minn., wrote in the July 13 *Journal of the American Medical Association*.

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However, a study of 40 men and 40 women showed that secondary lymphedema, leg swelling due to some extralymphatic process, affects men and women equally and usually begins after the age of 40, they said.

In 43 of the 80 patients, secondary lymphedema was the result of infections and women outnumbered men almost 2 to 1, they said. In 35 of the 80 patients, cancer or related malignant diseases was the underlying cause and men outnumbered women almost 2 to 1, they said.

Since surgery and radiation are possible causes of leg swelling, the researchers said, the patients selected for study had not undergone such treatment. Therefore, no women with cancer of the cervix were included in the study, they said.

## American Medical Association Issues Third Annual Therapeutic Number of the *Journal*

(Continued from Page 10)

and the proposed statement, he said, and ultimately, the statement, the opinions of the referee, the consultants and cooperating manufacturers are considered by the 13 members of the council.

Provision also is made for publication of significant changes in the status, or proposed additional uses, of previously evaluated drugs as new evidence accumulates, he said.



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## Most Common Form of Fainting Is Least Serious

The commonest form of fainting occurs only a few times in a healthy person's life, is basically due to psychological factors, and is least serious, according to an article in *Today's Health* magazine, published by the American Medical Association.

Fainting is only a symptom, one that may have a variety of causes in the opinion of Dr. George Engel, professor of psychiatry and associate professor of medicine, University of Rochester School of Medicine and Dentistry, Rochester, N. Y., who was quoted in the August issue of the magazine.

Generally speaking, such fainting is caused by some acute disturbance in the body's mechanism for maintaining blood circulation to the brain; when blood flow to the brain falls too low to maintain consciousness, the person blacks out, he said.

When a person faints at the sight of blood, when given unexpected bad news, or when taking a routine flu shot, Dr. Engel said, the faint is largely psychological in origin.

These common and usually harmless faintings, he said, all have one thing in common: The person is faced with some injury, either actual, threatened, or imagined, that frightens him.

Studies conducted by Dr. Engel have shown that under such circumstances a person undergoes the same physiological changes that occur when an organism responds to danger by running away. However, the researcher said, there is one important difference in that the fainter is in a situation where he cannot run away or take some other appropriate action to protect himself.

In healthy individuals this type of fainting commonly occurs when a person "experiences a fear he must deny," Dr. Engel said.

"Moreover, the greater the fear and the more blocked the action, whether of fleeing or fighting, the greater are the chances of fainting," he said. "By the same token, if the person's attitude toward his situation changes from one of fear and resigned acceptance to one of confidence or even of defiance, the likelihood of his fainting decreases."

Men seem to experience this type of fainting more than women, probably because men find it harder to acknowledge that they are afraid, Dr. Engel said.

There is another type of fainting, also primarily psychological in nature, which is more common in women, he said. Technically termed "hysterical syncope," it is the sort of fainting that occurs, for example, among bobby soxers in the presence of their singer-idol, or among beauty contest winners who swoon at the announcement of their victory, he said.

Hysterical fainting usually has a symbolic meaning for the individual and constitutes a psychological means of attempting to resolve an inner conflict, Dr. Engel said. The hysterical fainter, he said, does not demonstrate the physical changes recorded in fear-caused fainters.

The ordinary faint requires no elaborate treatment since the patient will usually recover rapidly, according to the article. In general, smelling salts or cold water compresses are not needed.

If possible, the fainter should lie flat for a few minutes. When there is no obvious injury, exercising the patient's legs while he is still lying down will help him to recover.

Repeated or frequent fainting is more serious. It indicates a basic underlying physical or psychological disturbance of some kind and requires medical attention. The reasons for such fainting vary widely.

The article was written by Judith-Ellen Brown.

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# California M E D I C I N E

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## Carcinoid Tumors

MALCOLM B. DOCKERTY, M.D., Rochester, Minn.

• Carcinoid tumors are diminutive growths found along the gastrointestinal tract, in the lungs and, occasionally, within the confines of teratomas. Carcinoid tumors of the intestinal tract are found in decreasing order of frequency in the rectum, the appendix, the ileum, the jejunum, the lung, the stomach and the duodenum. Arising from argentaffin elements in the crypts of Lieberkuehn, and secreting serotonin, carcinoid tumors belong to the order of functioning neoplasms. Their indolent growth seems to place them between benign neoplasms and carcinomas. However, they possess propensities for metastasis that correlate with increase in size.

The symptoms that are produced are almost

always due to the presence of metastatic lesions. In ileal and gastric carcinoid tumors, the tendency to metastasis is augmented and the metastatic masses are sometimes of sufficient bulk to cause the carcinoid syndrome or to interfere with the supply of blood to the affected segment. More often they produce the clinical picture of intestinal obstruction.

The unusually long interval from onset to death associated with carcinoid tumors makes palliative subtotal resections and short-circuiting operations in symptomatic patients with advanced disease worthwhile, for by such unorthodox procedures the patients may be afforded many additional years of useful life.

ORIGINALLY REGARDED by many physicians as a rare, small, yellow, asymptomatic benign tumor that nestled in the tips of obliterated appendices, carcinoid tumors are now recognized as frequently symptomatic cancers that may be found any place in the gastrointestinal tract, in the lungs and as tumorous nodules in the walls of cystic teratomas. Although slow-growing, these lesions are capable of producing lethal effects by causing intestinal obstruction, intestinal infarction, hepatic insufficiency, or cardiac failure from subendocardial fibrosis and valvular incompetency.

The purpose of this paper is to discuss carcinoid tumors of the small intestine in a series of 209 patients observed at the Mayo clinic and to compare

these growths with carcinoid tumors of the rectum, the appendix, the stomach and the lung.

### CARCINOID TUMORS OF THE SMALL INTESTINE

#### *Clinical Features*

Carcinoid tumors are the commonest tumors primary in the small intestine. One-third of the entire group of 600 cases of tumors at that site encountered at the clinic were carcinoid. Most carcinoid growths in that area are in older persons. In this series they were found in patients from 24 to 90 years of age, the average age being approximately 58 years. Two-thirds of the patients were men. Of the 209 intestinal carcinoid tumors, 137 were diagnosed at necropsy, and, although a few of these had contributed to the patient's death, I used the remaining 72 cases as the chief source for the clinical features that form the surgical segment of the series.

From the Section of Surgical Pathology, Mayo Clinic and Mayo Foundation, Rochester, Minnesota 55901.

Read at the annual forum of the Graduate Surgeons Society, Los Angeles, March 11, 1963.

Submitted April 1, 1963.



In both the necropsy and the surgical series, the tumors were, almost without exception, ileal rather than jejunal. Only four tumors were primary in the duodenum, and four were found in Meckel's diverticula.

Fifty-six patients had symptoms referable to the carcinoid tumors. In only one of the 56 was the correct diagnosis made preoperatively even though in 30 cases metastasis was so extensive that the surgeon could do little more than attempt subtotal removal or merely carry out a bypass procedure. It seems unlikely that any other gastrointestinal condition can lead to so high a proportion of indefinite or mistaken clinical impressions—and all this despite symptoms that averaged four years' duration and from two weeks to 21 years.

Approximately half of the patients complained of chronic, intermittent, progressive obstruction of the small intestine. Chronicity and intermittency were the key features of this complex; and when these symptoms are associated with loss of weight, diarrhea and an abdominal mass, they should alert the clinician to consider carcinoid tumor in his differential diagnosis. In one of the cases in the present series the transit time of food was so rapid that the presence of a gastrocolic fistula seemed certain. In four cases, an acute and catastrophic obstruction resulted from segmental infarction of the small intestine. The mechanism in each instance was the occlusion of the vascular supply by a carcinoid tumor located at the root of the mesentery.

Consideration of attacks of flushing and of diarrhea that developed initially in four and eventually in nine patients could have proved useful in pointing to the correct diagnosis. Most of our cases, however, preceded the elucidation of the carcinoid syndrome by Thorson and his associates. Moreover this syndrome is dependent on the presence of large and frequently irremovable metastatic masses in the mesenteric nodes, in the liver or elsewhere. (The only exception to this general rule is to be found in the occasional instance of a sizable carcinoid tumor that occupies the interior of a dermoid cyst.)

Bleeding was a symptom in only two patients. Since carcinoid tumors are little carcinomas and their small, exposed surfaces rarely ulcerate deeply, not much blood is lost from them into the gastrointestinal tract.

Other symptoms were incidental to the effects of tumor and invasion and were of no diagnostic consequence.

#### *Physical Findings*

Physical findings in patients with symptomatic carcinoids are not helpful. The abdominal mass that is felt in half of the patients represents either obstructed small intestinal loops, a metastatic mass in

the mesentery or a liver full of "secondaries"—all of which are late signs. A fluid wave is rarely elicited since peritoneal implants are small, slow-growing and fibrous or scirrhous. For some reason the implants do not induce the peritoneal irritation generated by other types of carcinomatosis and, accordingly, do not elicit an exudative response on the part of the peritoneum.

The patient may be observed in an episode of flushing, either of spontaneous origin or as a result of the physician's examining and palpating the abdomen. But with the syndrome exhibited in only about 10 per cent of patients, the condition is usually missed until discovered at operation.

#### *Roentgenographic Data*

Roentgenographic studies on the small intestine are not too revealing even under ideal circumstances. In the "carcinoid situation" the results are seldom correct and often misleading.

#### LABORATORY DATA

If an analysis of a 24-hour collection of urine for 5-hydroxyindoleacetic acid were requested in all cases of intestinal obstruction, correct preoperative diagnosis of carcinoid would be made more often. The upper level of the normal range for this substance is 10 mg excreted during a 24-hour period. More than 10 mg of 5-hydroxyindoleacetic acid in the 24-hour specimen signifies carcinoid with metastasis. About the only circumstance that will bring about a false-positive result from this test is that the patient has eaten a large amount of bananas beforehand.

#### *Surgical Findings*

If the clinical behavior of these midgut carcinomas is bizarre, so also is their appearance at the time of surgical exploration. In a symptomatic case, the surgeon may be confronted with any of a wide range of pathologic changes, from snarled, adherent, obstructed loops of small intestine to large, malignant masses in the mesentery or in the liver without any obvious evidence of a primary growth. Without the information from rapidly frozen sections, surgeons might complete half of the operations for carcinoid tumors without even having guessed the correct diagnosis. With the diagnosis settled by morphologic examinations, however, the surgeon may proceed fortified with three facts that are of extreme importance to the success of the operation. 1. In about one-third of all cases the tumors are multiple and the resection must include certain portions of the jejunum and the ileum that would not ordinarily be removed. 2. Bulky mesenteric and hepatic metastatic lesions should be

approached with the idea of totally or partially removing them in order to prevent or delay the devastating cardiovascular complications of the carcinoid syndrome. 3. Palliative, short-circuiting operations are generally worthwhile because an average of eight years elapses between onset of symptoms and death from metastasis.

Operation achieves five-year survival in 75 per cent of the patients with operable lesions and also in 30 per cent of patients with hopelessly irremovable lesions with metastasis to the peritoneum, lymph nodes or liver.

### *Pathologic Features*

When in the ileum, carcinoid tumors, also known as "little carcinomas," are multiple in 30 per cent of cases. Most of the lesions never grow beyond the intestinal wall, and, for this reason, are not discovered until they are noted incidentally at necropsy. Whenever I have heard of a carcinoid tumor that measures more than 2.8 cm in diameter, I have investigated the report and usually the lesion was not a carcinoid at all but a small cell carcinoma.

The size of the primary tumor correlates with the presence of metastatic lesions. Thus, in the present series, metastatic lesions were found in only 2 per cent of the patients with primary tumors that were less than 0.9 cm in diameter. For primary lesions with double that diameter, the metastatic rate was 50 per cent. Metastasis occurred in 80 per cent of cases when the lesions were 1.9 to 2.5 cm in diameter, and in all cases of carcinoid tumors more than 2.5 cm in diameter there were large-sized metastatic deposits. The liver and the lymph nodes were affected in equal incidence. Any metastatic lesions that were present were always larger in aggregate than the primary growths. Generalized metastasis was rare; there were only two instances in this series.

Even the smallest carcinoid tumors showed more of a tendency to invade the muscular coats, the peritoneum and the mesentery than to project through the mucosa. In the invading process they seemed to stimulate an over-production of collagenous and hyaline fibrous tissue. The result of this overproduction was a dense matting of adjacent loops of the intestine. The resulting buckling of the ileum brought about mechanical obstruction much as the kinking of a garden hose obstructs the flow of water. Multiple carcinoids gave rise to snarled masses. This phenomenon accounted for the obstruction observed in 33 of the 56 patients with symptoms. The selfsame fibrotic reaction, when it occurred in the mesenteric root and was associated with nodal metastasis, occluded the vascular supply to the ileum in four patients, and in three of them the gangrene of the intestine that resulted was fatal.

The bulk of the metastatic lesions, and *not* their location, correlated clinically with the existence of the carcinoid syndrome. It should be reemphasized that the syndrome is not dependent primarily on the presence of secondary lesions localized to the liver, some observations in the literature to the contrary notwithstanding.

The microscopic picture consisting of small, uniform, prismatic cells with granular acidophilic cytoplasm that are arranged in islands, cords, and ribbons is familiar. Metastasizing and nonmetastasizing cells have identical patterns. The occurrence of mitotic figures are as rare as the scirrhous reaction is common; both are diagnostic clues.

### **CARCINOID TUMORS OF THE RECTUM**

Reports of 209 cases of carcinoid tumor of the small intestine were found in the records of the Mayo Clinic for a 50-year period. Recently, a specific search was made for rectal carcinoids in the records of patients referred for proctoscopy during a 20-year period. That a total of 147 cases of carcinoid was discovered by this search indicates that the rectum is the most frequent site for carcinoid tumors of the gastrointestinal tract.

In comparing the rectal with the ileal series, it was found that 95 per cent of the rectal carcinoids were less than 1 cm in diameter, and only three lesions were multicentric. Only seven patients had symptoms referable to the lesions and metastasis was noted in only three cases. No case of rectal carcinoid with clinical flushing was found in the series or in the literature.

I have observed two cases of rectal carcinoid tumor in which there was metastasis to the liver. Because of this low incidence of metastasis from small rectal lesions, it has been thought that abdominoperineal resection should be reserved for cases in which the tumor is 1.5 cm or more in diameter. Local proctoscopic excision and fulguration have been considered adequate for smaller lesions.

### **APPENDICEAL CARCINOID TUMORS**

Like those of the rectum, appendiceal carcinoid tumors rarely get very big. They are usually located in obliterated appendiceal tips and are reported to be present in 0.5 per cent of removed appendices. My series consists of only 200 cases encountered at the clinic in a 50-year period. I have observed perhaps half a dozen appendiceal carcinoid tumors that were 1 cm or more in diameter and that were located in the proximal reaches of the appendix, causing acute obstructive appendicitis; in only two of these cases did metastasis occur.

A special problem arises with appendiceal car-



cinoid tumors when the growth is discovered to have breached the peritoneum. The discovery is usually made from permanent sections that are prepared a day or so after the appendix has been removed. The question arises whether the surgeon, in these circumstances, should reexplore the abdomen and carry out an extended resection of tissue. My answer to this recurring question is that simple appendectomy in these cases is practically never followed by further trouble.

#### GASTRIC CARCINOID TUMORS

The literature contains reports of 90 cases of primary gastric carcinoid tumor, and I have observed nine cases. Often they are found incidentally at operation for other conditions, such as duodenal ulcer. In several instances they have been reported as producing the carcinoid syndrome. Gastric tumors are small but, on an average, are larger than those found in the ileum. Gastric carcinoid tumors are multiple in 20 per cent of cases, and half of the total are associated with metastatic lesions. Principles of treatment are similar to those outlined for ileal growths.

The carcinoid syndrome is observed in 10 per cent of the patients with gastric carcinoid tumors.

#### BRONCHIAL CARCINOID TUMORS

Bronchial carcinoid tumors are no longer regarded as benign adenomas, the designation that described them as late as 1940. Comprising from 1 to 3 per cent of pulmonary cancers, these carcinoid growths differ from their gastrointestinal counterparts in

that they are somewhat more polypoid; thus, they produce their obstructive symptoms by obturating the involved airways. My colleagues and I<sup>1</sup> have observed and reported one instance of the carcinoid syndrome associated with bronchial carcinoid tumor.\* The incidence of metastasis from bronchial carcinoids is 10 per cent, but the sacrifice of tissue that is necessary to remove this lesion is somewhat less than that which is required in the treatment of ordinary lung cancer. About 90 per cent of the patients should survive 5 years after operation.

#### OTHER CARCINOID TUMORS

Carcinoid tumors of the gallbladder have been described in the literature, and there are perhaps a dozen examples of teratomas giving rise to these tumors that grow from the entoderm within the tumor. This type is a pathologic curiosity that is mentioned only to complete the list of possible sources for this interesting neoplasm.

Mayo Clinic, Rochester, Minnesota 55901.

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\*Four similar additional Mayo Clinic cases have more recently been discovered in a retrospective study.



# Carcinoid Tumor of the Vermiform Appendix with Distant Metastasis

## A Review of the Literature and Report of Two Cases, One in a 14-year-old Girl

JOHN KIERALDO, M.D., STANTON EVERSOLE, M.D., and RICHARD ALLEN, M.D., Palo Alto

THE NATURAL HISTORY of carcinoid tumors has traditionally been thought to vary with the location of the lesion.<sup>18</sup> In the appendix they are usually regarded as benign lesions while those in the small bowel are regarded as malignant. The following case reports and review of the medical literature give evidence that this difference may be more apparent than real. Langhans is usually credited with first describing the carcinoid tumor, in 1864, although some investigators credit Lubarsh with the initial description, in 1888.<sup>15</sup> Berger first described the appendiceal carcinoid in 1883. The term *carcinoid* was first introduced by Oberndorfer<sup>19</sup> in 1907, and in his description he emphasized its relatively benign nature. The great contributions of Masson<sup>17</sup> in the 1920's did much to clarify the true nature of the lesion. Masson was the first to demonstrate the ability of the tumor cells to reduce silver salts, which led to his coining the synonym *argentaffinoma*. At that early date he alluded to the lesion's endocrine nature, although this was not established until some 25 years later when in 1954 Thorson<sup>26</sup> and his associates described the malignant carcinoid syndrome and reported a significant series of cases.

Carcinoid tumors arise from the Kulchitsky cells located in the crypts of Lieberkuhn in the gastrointestinal mucosa. Potentially they can arise from tissue originating from the primitive embryonic endoderm and have been reported from the gastrointestinal tract, gall bladder, the tracheobronchial tree and ovarian teratoma. As one would expect, these tumors are more commonly found where the Kulchitsky cells are most numerous—in the appendix and distal small bowel.

### Appendiceal Lesions

The appendiceal lesion appears typically as a bulbous swelling of the tip, where 80 per cent of them

• Metastatic carcinoid tumors of the appendix are probably not as rare as is commonly thought. In five of thirteen cases diagnosed at the Stanford-Palo Alto Hospital, there was microscopic evidence of lymphatic invasion. Metastasis to regional nodes was demonstrated in two of the five. These two cases bring the total number reported in the medical literature to 31. One of the patients was a 14-year-old girl. The youngest patient previously cited with metastasis from carcinoid tumor of the appendix was 16 years of age.

We believe that all carcinoid tumors, regardless of location, are malignant lesions and urge careful pathologic study for evidence of lymphatic invasion. When such invasion is present, removal of regional nodes by right hemicolectomy seems indicated.

occur. They are usually yellow, due to lipid content. Histologically they are composed of nests and groups of uniform cells which in some cases show a tendency to gland formation. The cytoplasm of the cells contains granules which have the peculiar ability to reduce silver salts, giving it its characterizing metallic color.

The incidence of carcinoid tumors in surgically removed appendices is 0.522 per cent, as reported by Collins<sup>3</sup> in a combined review of 50,000 specimens, while the incidence in examined autopsy specimens is lower, being about 0.33 per cent. The incidence in our smaller series of some 1300 specimens was 0.996 per cent. This difference in reported incidence may be related to the interest and diligence the particular pathologist has in searching for the lesion.

From July, 1959, through December, 1962, thirteen cases of appendiceal carcinoid tumor were observed at the Stanford-Palo Alto Hospital. Ten of the thirteen were found incidentally in appendices that had been removed for other reasons. Because of microscopic evidence of lymphatic vessel invasion five of the patients then had additional operation, namely, removal of the regional lymph nodes

Presented before the section on General Surgery at the 92nd Annual Session of the California Medical Association, Los Angeles, March 23-27, 1963.

From the Department of Surgery, Stanford University School of Medicine, and the Stanford-Palo Alto Hospital, Palo Alto, 94304.



TABLE 1.—Patients with Metastatic Carcinoma of the Appendix (from the Literature)

Author	Age and Sex	Year Reported	Findings at Operation or Autopsy
1. Stewart-Taylor .....	31 Cauc. F.	1926	To pelvis. Alice and well, 10 years.
2. Oberndorfer .....	28 Cauc. F.	1929	To regional nodes. No follow.
3. Phillips & Isaacs .....	56 Cauc. F.	1930	To omentum-portal nodes. No follow.
4. Knoflach .....	64 Cauc. M.	1930	To mesentery-small bowel.
5. Morl .....	49 Cauc. M.	1932	To omentum-pleura-mesentery.
6. Raiford .....	16 Cauc. F.	1933	To ileum-cecum, presumed metastatic, but could represent multiple lesions.
7. D'Ingonni .....	56 Negro F.	1946	To regional nodes.
8. D'Ingonni .....	25 Negro F.	1946	To regional nodes.
9. D'Ingonni .....	44 Cauc. F.	1946	To regional nodes.
10. Stewart-Taylor .....	8 cases from literature (not included).		
18. Altmann-Mann .....	62 Cauc. F.	1948	To regional nodes and liver with second large lesion of cecum. Autopsy.
19. Patients from Knowles Series (19-27)			
Gubitz .....	49 F.	1923	To peritoneum and pleura.
20. Hasegawa .....	34 F.	1923	To regional nodes.
21. Hasegawa .....	93 F.	1923	To peritoneum, regional nodes and portal nodes.
22. Hasegawa .....	75 F.	1923	To peritoneum.
23. Von Rehren .....	69 F.	1925	To pericardium, peritoneum and portal nodes.
24. Collender .....	53 F.	1925	To liver.
25. King .....	60 M.	1929	To regional nodes.
26. Lewis-Geschickter .....	40 F.	1934	To regional nodes and liver.
27. Mallory .....	22 F.	1936	To regional nodes.
28. Knowles .....	19 Cauc. preg. F.	1956	To regional nodes.
29. Latham .....	19 Cauc. M.	1961	To regional nodes.

by right hemicolectomy. In two of the five so treated, microscopic evidence of metastasis was found in regional nodes.

That carcinoid tumors of the appendix with metastasis are rare was borne out in our review of the literature in which we found reports of only 29 documented cases that fulfilled MacDonald's<sup>16</sup> criteria, namely a primary appendiceal lesion with microscopic evidence of invasion and distant metastasis, and without a concomitant small bowel lesion. (See Table 1.) The youngest patient previously cited was 16 years of age, the oldest 93.

#### Reports of Cases

The following case reports from our series bring to 31 the total of carcinoid tumors of the appendix with metastasis. One of the patients was younger than any previously reported.

CASE 1. A 14-year-old Caucasian girl was admitted to hospital January 8, 1962, with a three-day history of abdominal pain, at first in the epigastrium generally and later localizing to the right lower quadrant. The patient complained of anorexia and nausea, but denied vomiting and diarrhea. Upon physical examination, abdominal tenderness localized to McBurney's point with mild rebound tenderness was noted. Leukocytes numbered 9,500 per cu mm of blood with 68 per cent polymorphonuclear cells.

A diagnosis of acute appendicitis was made. At operation the appendix, which was gangrenous and completely intussuscepted, was removed in the usual fashion. Upon microscopic examination, it was noted that a carcinoid tumor of the tip of the appendix had extended through the wall and into lymphatic channels. Hence, exploratory laparotomy was carried out and regional nodes were removed by a right hemicolectomy. No gross evidence of tumor was seen, but microscopic examination of the operative specimen showed metastatic tumor in two nodes of the ileocaecal group. The patient did well after operation and at last report 14 months afterward was asymptomatic. (See Figure 1.)

CASE 2. A 30-year-old Caucasian woman was admitted to the hospital on August 18, 1962, for chronic cholecystitis and cholelithiasis. Cholecystectomy and incidental appendectomy were carried out. There was slight swelling of the appendiceal tip and on microscopic examination of tissue from the site the mass was found to be a carcinoid tumor which had invaded the muscular wall and the perineural lymphatic channel. Right hemicolectomy was carried out and regional nodes removed. Again there was no evidence of residual or metastatic tumor on gross examination. Microscopic study of the specimen revealed metastatic tumor foci in one node of the ileocolic group. The patient did well and was

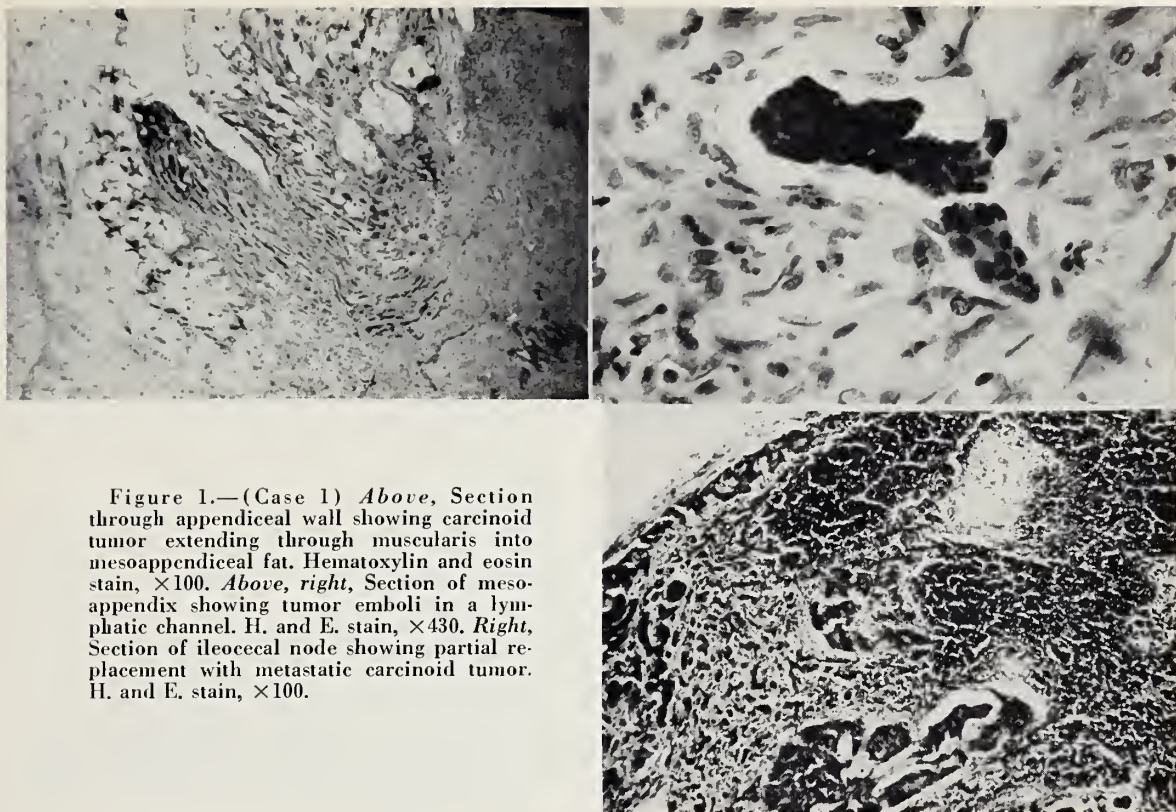


Figure 1.—(Case 1) *Above, left*, Section through appendiceal wall showing carcinoid tumor extending through muscularis into mesoappendiceal fat. Hematoxylin and eosin stain,  $\times 100$ . *Above, right*, Section of mesoappendix showing tumor emboli in a lymphatic channel. H. and E. stain,  $\times 430$ . *Right*, Section of ileocecal node showing partial replacement with metastatic carcinoid tumor. H. and E. stain,  $\times 100$ .

asymptomatic when last examined seven months later.

#### DISCUSSION

First, as to the two cases here reported we would like to emphasize the lack of gross evidence of metastatic tumor because some investigators advise removal of regional nodes only when there is gross evidence of tumor involvement. (See Figure 2.)

We are in agreement with other observers who feel that carcinoid tumors of the appendix with metastasis may not be as rare as is reported in the literature.<sup>13</sup> Many physicians, especially pediatricians, feel that this lesion of the appendix is benign and that simple appendectomy is adequate treatment.<sup>7,20</sup> With this opinion influencing surgical treatment, it is possible that metastasis sometimes goes undetected. Only time with careful long-term follow up will tell. Because of the very slow growth of the lesions, patients with carcinoid tumors will have to be observed for a much longer period after operation than patients with carcinoma in general to determine recurrence or cure. It is possible that observation for twice the usual five-year span will be necessary.

As to the question of whether a particular car-

cinoid tumor is benign or malignant, it is our feeling that all of them, regardless of location, are probably low-grade malignant lesions. One cannot apply the usual criteria of cellular malignant change—namely anaplasia, pleomorphism, and mitosis—to carcinoid tumors in order to classify them as malignant.<sup>15</sup> Rather the criterion must be microscopic evidence of invasion. In all of the 13 cases of appendiceal carcinoid tumor in our series there was some evidence of invasion, even if only invasion of the submucosa. We feel that in time all such lesions will extend their invasion and that soon or late metastasis will occur.

As compared with ileal carcinoid tumors the appendiceal lesions appear to be less likely to spread. To some extent this may be due less to a characteristic of the lesion than to the fact that appendiceal lesions are discovered earlier, when of smaller size. Early discovery, in turn, may be related to the earlier development of symptoms because of the smaller appendiceal lumen and to incidental discovery at appendectomy. The average age of patients at the time of diagnosis of appendiceal carcinoids is 25 years, while the average age at the time of carcinoid lesions elsewhere is 55.<sup>18</sup>

We urge that all removed appendices be carefully examined by the pathologist for carcinoid lesions



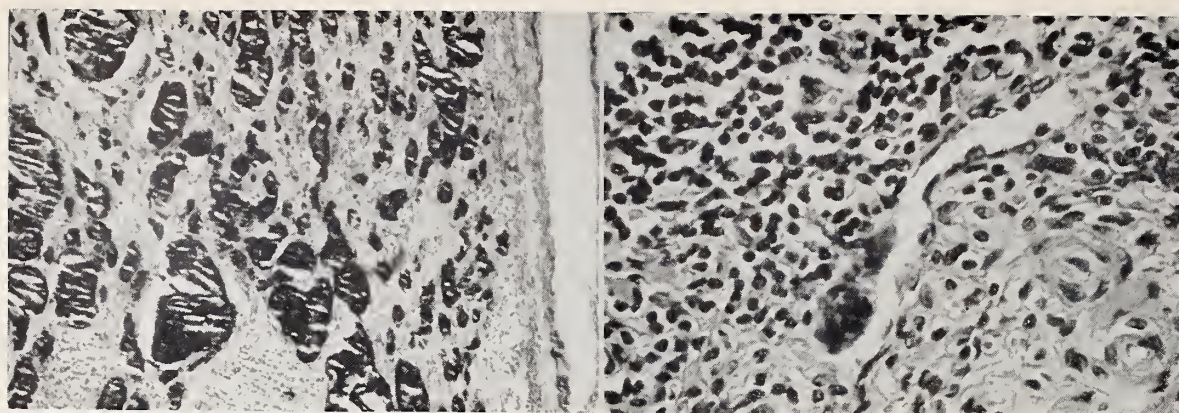


Figure 2.—(Case 2) *Above*, Section through wall of the appendix, showing carcinoid tumor invading muscularis. Argentaffin stain,  $\times 100$ . *Above right*, Section from appendix, showing tumor invasion of lymphatic channel. H. and E. stain,  $\times 430$ . *Right*, Section of an ileocolic node, showing metastatic tumor in region of peripheral sinus. Argentaffin stain,  $\times 100$ .

and for invasion of lymphatic vessels. When invasion is seen, removal of regional nodes by right hemicolectomy would seem indicated. It is debatable whether invasion through the wall, but not yet into the lymph channels, is reason enough to advise removal of regional nodes.

Finally, we urge careful long-term observation of patients after removal of carcinoid tumors, especially those subjected to simple appendectomy, in order that better data may be gathered on the natural history of the carcinoid tumor.

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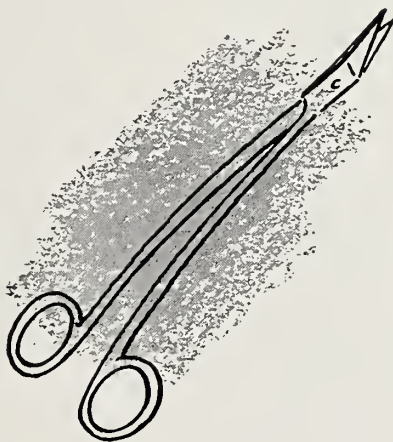
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# Insect Sting Anaphylaxis

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ANAPHYLACTIC REACTIONS to the stings of insects, fulminant by nature and responsible for a disturbing number of fatalities annually, have been the subject of numerous reports. There is excellent reason to believe that such phenomena are considerably more common than is generally recognized. In addition to the sizable number of properly diagnosed but unreported reactions seen each year, there is likelihood that many deaths from insect sting are incorrectly ascribed to heat prostration, myocardial infarction or causes unknown.

Parrish<sup>12</sup> has appropriately called stinging insects "giant killers," since these tiny arthropods are more deadly than poisonous snakes. Data from the National Center for Health Statistics, U.S. Public Health Service, show that during the ten-year period 1950 through 1959, 50 per cent of all deaths from venomous animals in the United States were caused by the stings of insects. Poisonous snakes accounted for 138 deaths, while stinging insects caused 299 during the same period. Bees killed 124 persons, wasps 69, yellow jackets 22, hornets 10, and ants 4.

Insect sting anaphylaxis, like its counterpart resulting from injections of penicillin and horse serum (as in tetanus antitoxin), constitutes a true emergency, in which time and proper treatment are indeed of the essence. General physicians, internists, pediatricians and industrial physicians particularly should become aware of this problem, and all physicians would be well advised to formulate a plan for the immediate treatment of such cases.

The earliest record of death from insect sting is contained in the hieroglyphics found at the tomb of King Menes of Egypt,<sup>4</sup> who probably was stung to death by a wasp or hornet in 2641 B.C. In 1765, Desbrest described a fatality from a bee sting above the eyebrow. Delaistre in 1776 reported a death from a hornet sting in the palate. The first report in the American literature likely was by Mease, who in 1811 described a man who was stung in the nasal septum by a bee and died 30 minutes later.

Insects are responsible for less severe clinical manifestations of hypersensitivity as well, the more prominent examples being asthma, allergic rhinitis, generalized urticaria and papular urticaria. The allergen in such cases enters by inhalation of scales

• Anaphylaxis from insect stings, which is considerably commoner than has been recognized, is a distinct emergency, requiring prompt and energetic treatment.

Such reactions require the immediate intramuscular or deep hypodermic injection of 0.5 cc of 1:1000 epinephrine, which may have to be repeated shortly. After the initial critical phase is passed, there may be indication for intramuscular antihistamines and corticosteroids.

Persons who have survived insect sting anaphylaxis should be immunized with insect antigens for a minimum period of three years and perhaps indefinitely. The choice between pure venom and extracts of whole insect bodies rests with the physician, although the latter are far more often used.

Until immunization has become effective susceptible persons must carry with them at all times a kit containing epinephrine for both injection and aerosol use, and they must be trained by physicians in the proper use of these preparations.

and dust from the living or dead insects or by instillation of material through the mouth parts of the biting insects. More than 30 different insects have been identified in such allergic reactions, including the aphid, beetle, butterfly, caddis fly, citrus fruit fly, cricket, deer fly, flea, gnat, house fly, locust, louse, Mexican kissing bedbug, midge, moth, mushroom fly, May fly, sewage filter fly, weevil and punky. The punkies, or black gnats, were called "no-see-ums" by the Indians, who found them to be both pestiferous and elusive.

The Phylum Arthropoda, which includes more species than all of the other phyla of the animal kingdom together, comprises such classes as the Crustacea (lobster, crab, water flea), Diplopoda (millipede), Chilopoda (centipede), Arachnida (spider, scorpion), and the Insecta (Hexapoda) or true insects. The stinging insects belong to the order Hymenoptera, which is the largest and most specialized order of insects, comprising more than 14,000 species in North America. The majority of stings are by the social (as distinguished from the solitary) species. The principal offenders (Figure 1) are the honeybee (*Apis mellifera*), paper wasp (*Polistes aurifer*), yellow jacket (*Vespula diabólica*), and hornet (*Dolichovespula maculata*). Also capable of stinging but responsible for a minority

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Figure 1.—a. Paper wasp (*Polistes aurifer*); b. Yellow jacket (*Vespula diabolica*); c. Black hornet (*Dolichovespula maculata*); d. Honeybee (*Apis mellifera*). From Hollister-Stier Laboratories, Spokane, Wash.



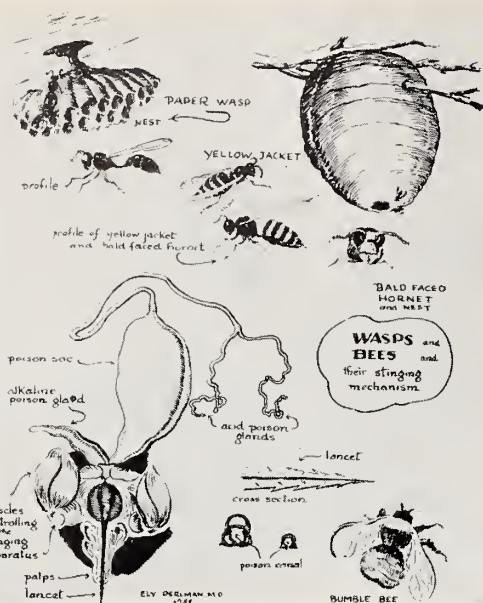


Figure 2.—Wasps and bees and their stinging mechanisms. From Perlman, E., J. Mt. Sinai Hosp., N. Y., 22:336, 1955.

of severe reactions are the bumblebee (*Bombus*) and several species of ants (*Formicidae*).

The honeybee and the bumblebee are members of the family *Apidae*. The paper wasp, hornet, and yellow jacket belong to the *Vespidae* or wasp family, and therefore are closely related. The paper wasp is readily identified by its spindle-shaped abdomen, which tapers at both ends. An untrained person would find great difficulty differentiating the hornet and yellow jacket, since the body contour is very similar and the colors in some species are identical. The honeybees are attracted to clover and therefore are found frequently in lawns. Yellow jackets build nests in the ground, under rocks and in walls of old buildings. The hornet builds large, oval, *papier-maché*-like nests usually in trees, while the paper wasps' open combs are in sheltered places such as garages, porches and under eaves. Bumblebees make small nests underground with relatively few inhabitants.

#### Sting Mechanism

The sting mechanism—the shaft that pierces the victim's skin—consists of a modified ovipositor and hence is found only in the female insect. The workers (abortive females) and the queen are the only honeybees with a sting, and the workers are unique in being the only insects to die after stinging. The worker bee leaves the sting with attached poison sac in the victim's flesh and then dies from self-inflicted evisceration.<sup>2</sup> The queen bee uses her sting only to exterminate rival queens. Hornets, yellow

jackets, paper wasps, bumblebees and ants can sting repeatedly.

The sting mechanism of the honeybee (Figure 2) consists of a barbed shaft containing two hollow lancets or darts.<sup>1</sup> Attached to this apparatus are two poison glands, one acid and one alkaline. Prominent barbs on the shaft anchor the sting firmly in the human skin. The sting continues to inject venom even after it is detached from the bee, due to the rhythmic contraction of the muscles controlling the venom sac.

#### Toxic Effects of Venom

The toxic effects of venom are the result of its hemorrhagic, hemolytic, neurotoxic and histaminic components. The venom contains the most powerful dehydrogenase inhibitor known—even more powerful than that of cobra venom.

It is likely that most beekeepers develop considerable tolerance to the toxic effects of venom, and there have been reported cases of survival in spite of more than 400 stings within a period of minutes. However, the clinical manifestations of toxicity are vastly different than those of anaphylaxis. Either can occur without the other.

#### Insect Allergens

Ellis and Ahrens<sup>3</sup> demonstrated in 1932 that in hypersensitive patients the reactions to bee antigens prepared from the head and thorax exclusively were the same as those made from the abdomen and sting mechanism and from the whole bee. Benson and Semenov<sup>1</sup> who pioneered in this phase of study of allergic reactions, showed clearly that the sensitizing antigen is not confined to the venom. They found positive intradermal reactions in susceptible subjects to be equal one to another whether the antigen was prepared from the sting mechanism, from the whole body of the bee, or from pure venom. It was their opinion, and it is the prevalent one today, that sensitization is to an allergen inherent in the body of the insect, and that the sting causes sensitization only because the identical allergen of the bee's protoplasm is included in the venom.

Foubert and Stier<sup>5</sup> prepared separate alum-precipitated antigens from the pulped bodies of hornets, yellow jackets, wasps (*Polistes*) and honeybees. Freund adjuvant-antigen mixtures were then injected repeatedly into rabbits, following which the animals were bled, and the specimens of blood that had high precipitin titers were subjected to gel diffusion studies by the Ouchterlony technique. In addition, guinea pigs were sensitized with the alum-precipitated antigens by repeated injection and then challenged with intracardiac injections of the extracts. The gel diffusion studies showed that yellow jacket, hornet, wasp (*Polistes*) and honeybee con-

tain common antigens which probably are immunologically identical. In addition, each insect was found to contain several antigens specific for the individual genus. The anaphylactic shock experiments in guinea pigs identified yellow jacket as the most potent sensitizer. Black hornet was the least potent, and animals sensitized to bee antigen showed the least degree of heterologous sensitization.

Passive transfer and cross-test studies carried out by Loveless and Fackler<sup>9</sup> also led to the conclusion that yellow jacket, bald-faced hornet, paper wasp, honeybee and bumblebee possess a common allergenic specificity, while each has in its venom a component specific for that insect.

### Clinical Features

The clinical manifestations of insect sting anaphylaxis are various combinations of the following: Weakness, restlessness, apprehension, dyspnea, urticaria, loss of consciousness, nausea, vomiting, generalized burning pain, profuse perspiration, severe abdominal cramps, frothing at the mouth, chills, vertigo, and evacuation of bowels and bladder. Symptoms usually begin within seconds or in some instances within two minutes of the sting and quickly reach a critical peak. When death occurs, it usually is within 30 minutes after the sting.

### Necropsy Findings

The positive features at necropsy have included diffuse petechial hemorrhages in the viscera and other body tissues, pronounced visceral congestion, frothy or blood-tinged mucus in bronchi (Figure 3), laryngeal edema, pulmonary emphysema and edema and cerebral edema.

### Mechanisms of Anaphylaxis

It has been suggested that anaphylaxis may be caused by the sting's puncturing of a vein in the dermis so that some of the venom enters the circulation immediately. While this may be remotely possible, the chances of its occurring are infinitesimal. In describing a patient who had been stung for years without reaction, and then had progressively increasing hypersensitivity to the stings within a period of a few months, Jex-Blake<sup>7</sup> said that "one cannot believe that the bees should have missed the veins a dozen times a year for 20 years and in the ensuing 9 months punctured them 11 times in succession."

As early as 1914, Waterhouse<sup>15</sup> concluded that severe reactions to insect sting "suggest a change which cannot be accounted for by the mere absorption of a minute quantity of irritant poison in a normal individual." Continuing, he said, "The depressed heart's action, the sudden urticaria and vasomotor phenomena, and the embarrassment of

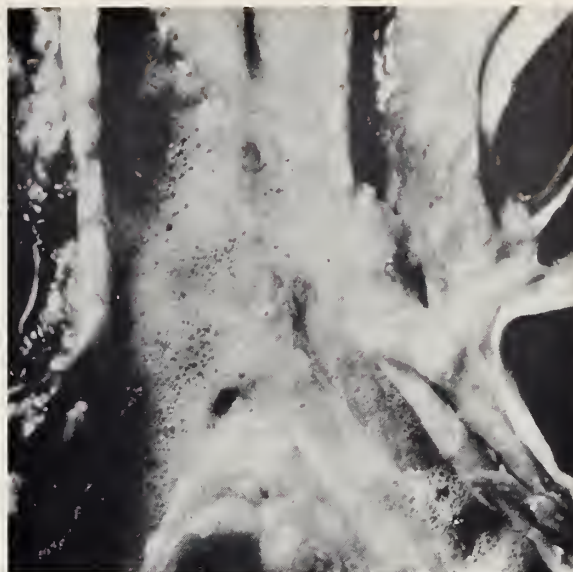


Figure 3.—Photograph of open trachea and main bronchi of patient who died of insect anaphylaxis. Note large quantity of mucus and frothy fluid in lumen. From Schenken, J. R., *Amer. J. Clin. Path.*, 23:1216, 1953.

inspiration are all strongly suggestive of anaphylaxis . . ." We can better appreciate the remarkable astuteness of this observation when it is recalled that the term *anaphylaxis* had been introduced (by Portier and Richet) only twelve years previously!

The majority of reported cases of anaphylaxis in humans have been in persons who were exquisitely hypersensitive to horse serum, penicillin or insect stings. Anaphylaxis from rupture of an echinococcus cyst is comparatively rare, albeit the phenomenon occurred in a patient attended by the author when the cyst was ruptured during surgical removal. Injection of the anaphylactogenic protein is the route *par excellence* to produce the immunological explosion, and the sting mechanism of an insect is just as effective as a loaded syringe with needle. Davidson<sup>2</sup> has, in fact, referred to the barbed sting of a bee as "a living hypodermic."

There have been a number of instances reported of individuals becoming allergic both to the sting and to the inhalation of scales and debris shed by the same kind of insect. In such cases, the inhalation of insect debris caused asthma, while the sting induced anaphylaxis. An analogous situation, and one with which most physicians are more familiar, is the coexistence in the same person of asthma from inhalation of horse dander and anaphylactic sensitization to horse serum. Whether it be horse or insect protein, the "injection" can be fatal.

It may be that chances of anaphylaxis from two or more insect stings are greatly enhanced in many individuals who have become atopically sensitized to insect debris as an inhalant antigen. Since the



antigen protein in the two sources is so similar, anaphylactic antibodies may be developed more quickly and more abundantly after stings, as a result of previous exposure to the debris as an inhalant.

#### TREATMENT

Therapy for severe insect sting hypersensitivity should be considered from the standpoints of immediate, second stage, and long-term care.

##### 1. Immediate Treatment of Anaphylaxis

The extreme rapidity of onset and the fulmination of symptoms demand prompt and energetic treatment. The specific and indeed the only drug for this emergency is aqueous epinephrine 1:1000; 0.3 cc to 0.5 cc should be given intramuscularly or by deep subcutaneous injection, and the site of injection massaged vigorously to hasten the absorption of the drug. The patient's response will dictate whether or not to repeat the dose. Failure to give epinephrine promptly for insect sting anaphylaxis is to invite fatality. There is no place in the early moments of treatment for such agents as antihistamines and corticosteroids.

##### 2. Second Stage Treatment

a. If shock persists, in spite of epinephrine, it may be necessary to give a sympathomimetic agent such as metaraminol (Aramine® or Pressonex®), 100 mg in 500 cc isotonic saline solution intravenously.

b. A tourniquet should be placed above the sting site, if possible.

c. If the sting remains in the skin, it should be removed with a flicking or scraping motion of the fingernail or a knife blade.

d. Antihistamine may be given intramuscularly to combat the more prolonged effects of the allergic emergency. Chlorpheniramine maleate (Chlor-Trimeton®, 100 mg per cc), 0.5 to 1.0 cc; diphenhydramine (Benadryl®, 50 mg per cc), 0.5 to 1.0 cc; and tripeleminamine (Pyrribenzamine®, 25 mg per cc), 0.5 to 1.0 cc are useful.

e. Corticosteroids are useful in preventing such delayed reactions as urticaria. Dexamethasone (4 mg per cc), for example, is given intramuscularly in doses of 1.0 or 2.0 cc, repeated as necessary.

##### 3. Long-Term Care

Every person who has survived insect sting anaphylaxis should have long-term desensitization (immunization) with appropriate insect antigens. The Insect Allergy Committee<sup>8</sup> of the American Academy of Allergy has studied approximately 1,500 case histories of insect sting allergy, 311 concerning patients who were desensitized and re-

stung. Eighty-eight per cent of the latter showed definite improvement, as evidenced by protection against subsequent stings. Although there should be no question about the propriety of such immunization, there is some disagreement about the type of therapeutic antigen and the method to use. Loveless<sup>10</sup> employs pure wasp venom from carefully excised venom sacs. In earlier work<sup>9</sup> she used an average of six sacsful of venom in six divided endermal doses over a period of two and one half hours. In later studies wasp venom was given in an Arlcel®-Atreol® emulsion (1:6.5 mixture). Loveless estimated that the single repository injection gives protection for a period of four to six months. Deliberate stings several weeks after treatment indicated good immunity in her patients, and the stings were used to further enhance and prolong the immunity.

Gaillard<sup>6</sup> gave 227 repository injections of mixtures containing pulped whole bodies of female yellow jackets, wasps, bees and hornets to 124 patients and found this treatment to be as effective as multiple aqueous injections. Two patients who received such treatment subsequently developed delayed positive skin reactions on retesting, the exact significance of which is not clear.

Loveless<sup>14</sup> cautioned against the indiscriminate use of therapeutic insect antigens. It was her contention that the administration of "extraneous proteins may set up over a long term such antibody responses as theoretically underlie periarteritis and similar disorders of obscure origin." She reasoned that the insect sting injects only venom, hence the sensitization must be to venom and not to whole insect body protein.

Atreol, a highly purified mineral oil, serves as an immunological adjuvant in the repository emulsions used by Loveless and Gaillard. Like all adjuvants, it is capable of enhancing antibody production significantly. It has been assumed generally that this process is as benign as it apparently is beneficial. A question<sup>13</sup> has been raised concerning the possible carcinogenic effects of mineral oil in the emulsion. While definite evidence of serious long-term ill-effects from repository injections in humans is lacking, the procedure probably will be the subject of critical scrutiny during the next few years.

Loveless encourages the identification of the offending insect by patient and physician, and feels that ideally the venom of that insect alone should be given. Mueller,<sup>11</sup> Foubert and Stier<sup>5</sup> and others have expressed belief that the patient seldom is able to identify the offending insect, and have taken the stand that an incorrect identification certainly is worse than none at all.

Immunization with extracts of whole bodies of insects is the method most commonly employed.

While there may be merit in the argument of Loveless against such therapy, there has been no evidence produced to show that the hundreds of thousands of injections of such antigens given by hundreds of allergists through the years has led to periarteritis nodosa or similar vascular lesions. Sensitive patients should be skin-tested with extracts of each of the principal insects, beginning with exceedingly weak concentrations. Mueller<sup>11</sup> recommended 1:100,000,000 as the initial concentration for this purpose. Decimal increases in concentration are applied at 15 to 20 minute intervals until positive reactions result. Fresh solutions for testing should be prepared every four weeks because of loss of potency. Negative reactions to skin tests, however, do not rule out allergic sensitivity to insects. A patient with a history of anaphylactoid symptoms following insect sting, but who has negative skin tests and cannot identify the insect, should be treated with an antigen composed of honeybee, hornet, paper wasp and yellow jacket. Walter and Coleman<sup>14</sup> found that 61 per cent of their patients had positive and 39 per cent had negative response to skin tests. Mueller<sup>11</sup> reported that 89 per cent of patients he studied were found to be allergic to more than one insect, and over 60 per cent showed sensitivity to three or four stinging insects.

Desensitization procedures carried out over a period of three years are considered by many to be adequate. While this is empirical, there has been some practical support for it. Walzer and Coleman<sup>14</sup> expressed belief that patients in whom stings produced only urticaria or angioedema may discontinue treatment at the end of three years, while those with more severe symptoms should be treated indefinitely.

A hypersensitive person who is being desensitized (immunized) to insect sting remains in jeopardy until such time as the desensitization becomes effective. It is not unusual for this to require several months of active treatment. During that interval, the patient must keep on or near his person at all times a kit (Figure 4) containing injectable epinephrine, epinephrine for nebulization, cotton sponges and alcohol. The following are particularly helpful:

1. Two ampins (Moore Kirk Laboratories, Inc.), each containing 0.5 cc of epinephrine USP, 1:1000, sealed under pressure and connected ingeniously by rubber tubing to a sterile needle.

2. Medihaler-Epi® (Riker), a nebulizer which delivers an estimated 0.15 mg of epinephrine with each measured dose.

Pending development of adequate immunity from desensitization, the patient's life may depend on the self-administration of epinephrine within one or two

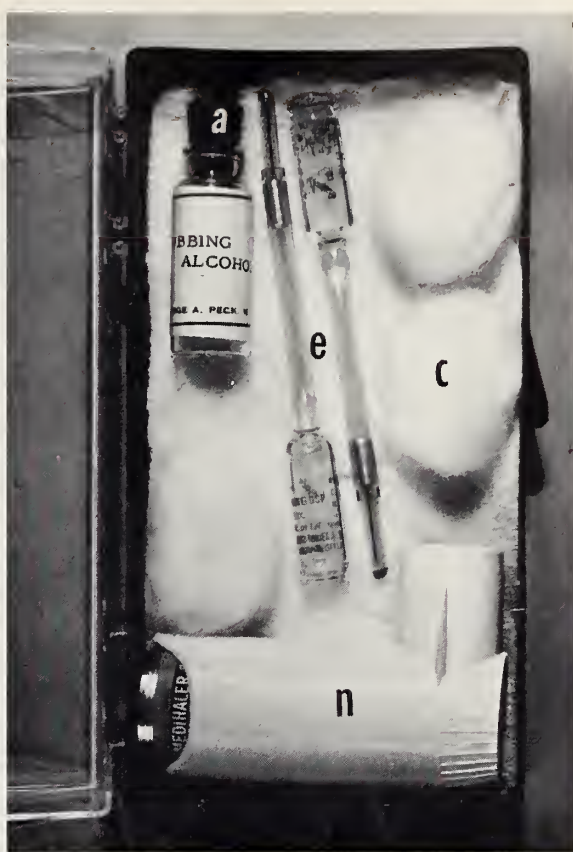


Figure 4.—Emergency insect sting kit. *a*, rubbing alcohol; *c*, cotton balls; *e*, epinephrine ampins; *n*, epinephrine nebulizer.

minutes after a sting. He should not use the drug indiscriminately, the indication for its use being the earliest appearance of any symptoms suggesting impending anaphylaxis. Once such symptoms have appeared, his fight is against time.

These are the instructions the patient is to follow:

1. Take two inhalations from the Medihaler-Epi® and hold breath in inspiration for five seconds or longer.
2. Give contents of 1 ampin of epinephrine into anterior thigh muscle, and vigorously massage injection site for 1 or 2 minutes.
3. Summon medical aid.

It has been proposed that sublingual isoproterenol be used instead of injectable epinephrine. While the former is unquestionably easier to administer, its speed of action and efficacy are distinctly less than the combined effects of the injected and inhaled epinephrine.

A person who is hypersensitive to insect stings should be warned against wearing perfumes, strong-scented hair preparations and vividly-colored clothing, which attract stinging insects. He also should avoid handling attractive flowers in their natural

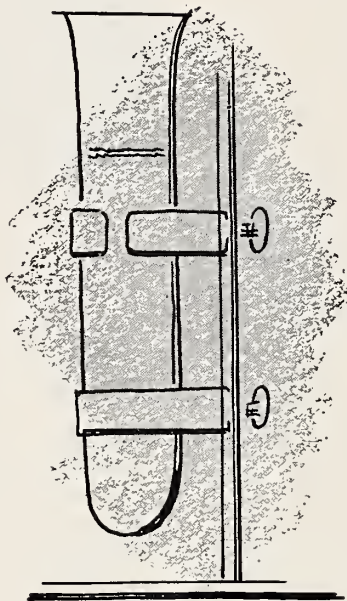


habitat, as insects are much more likely to sting when there is apparent interference with the gathering of nectar.

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# The Nature of Gastric Ulcers Seen After Local Gastric Hypothermia in Dogs

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GASTRIC FREEZING was introduced as a therapeutic procedure for peptic ulcer in 1962 by Wangenstein and his associates.<sup>1,2,3</sup> One of the preliminary laboratory observations that had important clinical implications was the unusual tolerance of the stomach to cold. In dogs the stomach could be frozen at an inflow temperature above  $-25^{\circ}\text{C}$  for periods up to one hour with no apparent serious injury. However, at temperatures below  $-25^{\circ}\text{C}$  for 60 minutes or more, varying degrees of gross mucosal injury became evident. Animals subjected to gastric freezing at temperatures of  $-60^{\circ}\text{C}$  to  $-80^{\circ}\text{C}$  all died of massive necrosis of the stomach.<sup>1</sup>

To render the gastric freezing procedure safe for clinical use it is important that the factors which are responsible for undesirable gross mucosal injury be clearly defined. The purpose of this study is to delineate these factors, to describe the mucosal lesions resulting therefrom and to suggest means by which the gross mucosal injury may be minimized.

## METHOD

Using a Swenko gastric hypothermia machine,\* 43 mongrel dogs were subjected to 54 gastric freezing procedures. Several variables in the freezing technique were studied.

GROUP I. (Three dogs). Using the standard Swenko infusion tip (single end-opening), the stomach was frozen for 60 minutes with an inflow temperature of  $-19^{\circ}$  to  $-20^{\circ}\text{C}$  and an average outflow temperature of  $-12^{\circ}$ .

GROUP II. (Seven dogs). Using the same single end-opening infusion tip, the stomach was frozen for 45 minutes at inflow and outflow temperatures of  $-17^{\circ}$  and  $-10^{\circ}\text{C}$  respectively.

GROUP III. (Thirteen dogs). Using a new infusion tip with multiple perforations for diffusion of the inflow stream, the stomach was frozen for 45

• The factors involved in the production of significant mucosal injury in gastric freezing were studied in a group of dogs. The study showed that diffusion of the inflowing coolant solution to prevent the "jet thrust" phenomenon on the anterior stomach wall minimizes the gross mucosal lesion. Use of a newly designed infusion device permitted freezing for 60 minutes without significant mucosal injury.

minutes at inflow and outflow temperatures of  $-17^{\circ}$  and  $-10^{\circ}\text{C}$  respectively.

GROUP IV. (Twenty-two dogs). The experiments with these animals were carried out with varying types of diffusion tips and with freezing intervals of from 45 to 60 minutes. Several of the animals were used to demonstrate the jet-thrust of the coolant solution by cinefluorographic studies and to create ulcerative injuries in specific locations at will by varying the location of the infusion tip.

GROUP V. (Thirteen dogs). A new infusion apparatus, termed the manifold balloon infusion device, was especially designed to eliminate the injurious jet-thrust of the coolant fluid by diffusing the cold alcohol and centering the infusion tip. By employing this device, the stomach was safely frozen for 60 minutes at inflow and outflow temperatures of  $-17^{\circ}$  and  $-10^{\circ}\text{C}$  respectively.

## RESULTS

A striking feature in all animals in which gross lesions were produced was the constancy of the injured site: it was always on the anterior stomach wall in the proximal portion of the body of the stomach, with occasional extension toward the greater curvature.

The degree of gross injury observed varied from barely detectable superficial ecchymosis to necrotizing destruction of the full thickness of the stomach wall. The variation in the degree of injury was dependent on the duration and degree of hypothermia employed as well as on the means by which the coolant solution was delivered.

GROUP I. (60 minutes,  $-20^{\circ}\text{C}$  inflow,  $-12^{\circ}$  out-

\* Manufactured August 1962.

From the Surgical Research Laboratory, Cedars of Lebanon Hospital, Los Angeles 90029.

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Figure 1.—Canine stomach 24 hours after freezing at  $-20^{\circ}$  C inflow and  $-12^{\circ}$  C outflow for 60 minutes. "X" designates area of localized bullous edema on anterior wall in proximal third of stomach. Arrow points to area of mucosal ulceration measuring approximately 1 cm in diameter. "Y" indicates surrounding edema.



Figure 2.—Retouched photograph of manifold balloon infusion device within larger intragastric balloon. The smaller balloon receives full force of inflowing alcohol and dissipates it in fine spray from frontal surface; the pressure also distends a number of finger-like projections which center the device.

flow; single end-opening). Gross ulceration and/or severe bullous edema seen in all animals.

GROUP II. (45 minutes;  $-17^{\circ}$  C inflow,  $-10^{\circ}$  C outflow; single end-opening). Lesions more superficial. Localized edema, mucosal erosions rather than ulcerations, occasionally lesions quite extensive.

GROUP III. (45 minutes;  $-17^{\circ}$  C inflow,  $-10^{\circ}$  C outflow; multiple opening diffusion tip). The simple addition of the diffusion tip resulted in a lessened degree of mucosal injury. Minor superficial mucosal erosion and superficial ecchymosis without erosion were the lesions seen.

GROUP IV. In this heterogeneous group of experiments, varying degrees of injury ranging from gangrene of the full-thickness of the stomach wall to minor mucosal erosions were produced at will

by varying the length of the infusion inflow tip, the number of side holes in the infusion tip and the degree and duration of hypothermia. A cinefluorographic study also showed clearly how the jet stream from the single end-opening infusion tip subjected the anterior wall of the stomach to the brunt of the "jet thrust" of the coolant. It was in this area that gross lesions were constantly observed. The studies on this group of dogs confirmed the superiority of the side-vented infusion tip over the single end-opening and more clearly established that 45 minutes of freezing at inflow and outflow temperatures of  $-17^{\circ}$  and  $-10^{\circ}$  C respectively was tolerated without serious gross injury. If freezing was extended beyond this time, significant gross mucosal lesions occurred.

GROUP V. By employing the manifold balloon infusion device, the freezing time was successfully extended to 60 minutes at inflow and outflow temperatures of  $-17^{\circ}$  C and  $-10^{\circ}$  C respectively without significant gross mucosal injury.

#### DISCUSSION

The important factors related to the mucosal injury in gastric freezing may be listed as follows:

1. Flow rate of coolant (alcohol).
2. Degree and duration of cold.
3. Size of stomach and thickness of its wall.
4. Intragastric position of inflow apparatus and force of inflow stream.
5. Nature and thickness of the material used for the gastric balloon.

Although each of the above factors is of critical importance, the major portion of this study was concerned with the influence of the degree and duration of hypothermia and the intragastric delivery of the coolant solution.

This study established that coolant solution delivered through a single end-opening infusion tip subjects the anterior stomach wall to a traumatic jet-thrust which results in significant gross mucosal injury (Figure 1). Modification of the inflow system so that the coolant is dispersed through multiple side vents in the infusion tip reduces the degree of mucosal injury, but still does not make the procedure completely safe for the physiologically desirable 60-minute freeze period.

A newly designed manifold device prevents the infusion tip from touching the gastric wall and diffuses the cold fluid in such a fashion as to preclude any significant gross mucosal injury (Figure 2). With this device it is again possible to increase the duration of the gastric freeze to 60 minutes.

Work is now in progress to modify the intragas-

tric balloon so that it may fit the contour of the entire stomach more satisfactorily. One of the problems with the present balloon has been the relative inaccessibility of the gastric antrum which is not frozen uniformly or as well as the more proximal stomach. Should some new and more suitable material be found, it will be important to reset the standards for flow rate, as well as the duration and degree of cold.

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# Treatment of Hypertension

## An Evaluation of Alpha-Methyldopa

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SEVERAL STUDIES have been published establishing the effectiveness of alpha-methyldopa, a newly developed hypotensive agent.<sup>3,5,7,8,9</sup> Much of the effectiveness of this substance was attributed to decarboxylase inhibition with respect to the conversion of dopa to dopamine and with respect to the conversion of 5 hydroxytryptophan to serotonin, which reduced tissue catecholamines and tissue serotonin. Blaschko, commenting on the similarities between these substances, noted that not only does the same decarboxylase participate in their formation but the same enzyme, monamine oxidase, participates in their destruction. Adenosine triphosphate is involved in their storage and reserpine releases them.<sup>2</sup> Since the catecholamines are much more vasoactive than serotonin<sup>6</sup> and are entirely comparable to angiotensin in this respect (although differing from the latter qualitatively) it was predicted that the hypotensive effects of alpha-methyldopa were due mainly to interference with catecholamine formation. However, depression of vanillyl mandelic acid excretion was not demonstrable in six patients receiving alpha-methyldopa in effective therapeutic amounts.<sup>4</sup>

The present study was undertaken to verify the effectiveness of this drug when given in standard doses to well-studied patients with hypertension observed over a considerable period. Since many of the patients were receiving diuretic therapy in the form of benzothiadiazine derivatives, comparisons as to effectiveness of the drug given alone and in combination with such diuretics were available.

An alternating double blind experiment was set up. Twenty patients ranging in age from 39 years to 84 years were taken at random. Those receiving a benzothiadiazine derivative continued to receive that drug but all other medications were discontinued. Alpha-methyldopa (Aldomet® was used) or a placebo was given to these patients as 250 mg tablets to be taken four times daily. Without the knowledge of the observers and at two-week intervals the patients were switched from the placebo to the active drug or vice versa.

Blood pressure was determined both in the erect

• In a study utilizing an alternating double blind technique 15 patients were given alpha-methyldopa in divided doses of 1 gram daily alone and in combination with a benzothiadiazine diuretic. The average blood pressure of patients receiving the drug alone was 157/90 mm of mercury, against the placebo control of 195/109 mm. The average blood pressure of patients receiving the drug in combination with a benzothiadiazine diuretic was 164/98 mm; in the control with placebo plus benzothiadiazine diuretic, it was 169/104 mm. Alpha-methyldopa appeared to be effective in reducing blood pressure in patients with benign essential hypertension.

TABLE 1.—Mean Erect Blood Pressure in Patients Receiving Alpha-Methyldopa 1 gm (or Placebo) Daily

Case No.	Placebo	Placebo Plus Diuretic	Methyldopa	Methyldopa Plus Diuretic
1. ....	.....	150/103	.....	145/100
2. ....	180/110	.....	160/90	.....
3. ....	.....	180/120	.....	165/105
4. ....	.....	210/110	.....	173/90
5. ....	.....	160/95	.....	170/110
6. ....	210/120	.....	175/93	.....
7. ....	190/90	.....	145/80	.....
8. ....	173/110	145/95	175/93	150/100
9. ....	210/110	.....	.....	.....
10. ....	195/100	.....	140/90	.....
11. ....	.....	155/110	.....	165/100
12. ....	220/120	.....	110/60	.....
13. ....	170/110	.....	135/80	.....
14. ....	.....	180/90	.....	185/88
15. ....	.....	215/110	.....	163/95
Average .....	195/109	169/104	157/90	164/98

and the supine positions, and observations were made by two different observers at an interval of 30 minutes to 60 minutes. Before therapy was started, a complete blood cell count, urinalysis and serum glutamic oxalacetic transaminase and creatinine determinations in the blood were carried out. In the presence of clinical evidence of toxicity and in selected cases at the termination of therapy, these procedures were repeated. No restriction of diet was employed. Patients receiving benzothiadiazine drugs were instructed in high potassium diets.

### RESULTS

Of the initial group of 20 patients, three discontinued the medication because of undesirable side

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This study was aided in part by a grant from Merck Sharp & Dohme.

TABLE 2.—Side Effects Recorded by 15 Patients Receiving Alpha-Methyldopa

	Number	Per Cent
Fatigue .....	3	20
Drowsiness .....	3	20
Headache .....	2	13
Faint spells .....	2	13
Dizziness .....	2	13
Dyspepsia .....	2	13
Constipation .....	1	7
Diarrhea .....	1	7

effects and were dropped from further study. Two were lost to follow-up. The remainder were followed for from two to six months. The average blood pressures found during placebo therapy and the average blood pressures found during therapy with Aldomet® are presented in Table 1. Analysis of supine and erect blood pressures revealed figures in each case that were nearly identical, and these figures are not separated in this analysis. Side effects were generally quite mild and often much less disagreeable than those experienced during previous regimens. When the study was terminated we were surprised to find that all three patients who found the drug side effects intolerable were receiving placebos. The side effects recorded from these three patients are not included in Table 2.

#### DISCUSSION

It is curious that in the present series comparatively little effect was demonstrated in patients who were already receiving a benzothiadiazine drug. The reasons for this are several. (1) These patients represent, in general, those who already have been brought under control by a variety of hypotensive drugs. Blood pressures recorded before any therapy was administered were much higher in the majority of cases. All that was demonstrated in these patients was that control did not abate during the periods of placebo therapy. (2) The standard dose of alpha-methyldopa was relatively small and therefore probably inadequate for these patients with relatively more severe hypertension. (3) The theoretic consideration that patients under treatment with benzothiadiazine drugs may be less responsive to catecholamines.<sup>1</sup>

The relative lack of side effects is likewise attributable largely to the comparatively small standard dose employed. It is curious that all three patients who found it impossible to continue the medication were receiving placebo therapy at the time they discontinued the drug. It is notable that for three patients Aldomet® was resumed after the study either

because of intolerance of or inadequate response to subsequent therapy with other drugs.

Double blind studies are chiefly useful where the effectiveness of a new drug is in question. Alterations of dose to suit the patient's needs, use in particular situations and use in patients with multiple disorders are denied the investigator. By use of an alternating double blind technique the disadvantages of a small series are to a degree but not completely nullified. The results of a study such as this are therefore not comparable to the results of studies not so rigidly controlled but involving larger numbers of patients. It is our impression that Aldomet® is a drug of proven hypotensive effectiveness parallel in many respects to reserpine when used in patients with benign essential hypertension, and that it is considerably more effective than reserpine when used alone but not comparable to either the ganglionic blocking agents or guanethidine when the latter are used in combination with a benzothiadiazine diuretic. It seems to entail considerably less hazard of hypotensive catastrophe, there having been no significant difference in blood pressure between the erect and the supine positions in any of the patients.

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# Treatment of Hypertension

## The Special Place of Alpha-Methyldopa—A Short Term Study

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A METHOD by which chemical formation of vaso-pressor substances would be blocked gives promise of a superior approach to the treatment of arterial hypertension. Alpha-methyldopa,\* a decarboxylase inhibitor, is a new antihypertensive drug which acts at least partly in this manner. Its potential clinical value as an antihypertensive drug was first emphasized by Oates and his associates.<sup>6</sup>

Although the mechanism by which this drug produces its hypotensive action is not completely understood, its pharmacological effect is probably due to a reduction in the synthesis of norepinephrine. Unlike most other potent medications currently used for the treatment of hypertensive vascular disease, alpha-methyldopa does not block transmission of autonomic impulses but lowers concentration of norepinephrine and serotonin in the tissues. This mode of action has advantages for it offers selectivity as well as specificity.

Antihypertensive drugs exerting more generalized interference with autonomic functions have disconcerting side effects, including constipation, nasal stuffiness, dry mouth, visual disturbances and impotence. These are observed during treatment with rauwolfia alkaloids, ganglionic blocking drugs and postsympathetic blocking drugs, but usually do not occur during treatment with the new drug. More extensive clinical experience reported from various centers, including our own,<sup>1,2,4,5</sup> and a series of studies reported at the International Congress of Cardiology in Mexico City last October by Edwards, Dollery, Bayliss and others, confirm these findings.<sup>3</sup> There was exceptional interest in this drug and no other single subject received such wide attention at this International Congress. Eighteen studies were presented on alpha-methyldopa from 14 different countries on four continents.

\*Supplied as Aldomet by Merck Sharp & Dohme Research Laboratories, West Point, Pennsylvania.

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Supported by The John A. Hartford Foundation, Inc., New York, and Merck Sharp & Dohme Research Laboratories, West Point, Pennsylvania.

• Alpha-methyldopa in amounts of 750 mg twice daily is an effective antihypertensive agent, intermediate in potency between reserpine-thiazide combinations and ganglionic-sympathetic blocking drugs. Because it produces few undesirable side effects, it is well accepted by patients.

It is useful for patients with moderate or severe hypertension not controlled by reserpine-thiazide combinations. Its favorable action on cardiac output and renal blood flow provides special advantages for patients with advanced hypertension aggravated by cardiac or renal combinations.

In assessing the place of alpha-methyldopa as an addition to the already extensive armamentarium of antihypertensive drugs, we examined the clinical, hemodynamic, renal and metabolic changes which followed its use. This antihypertensive agent may have special advantages because, while lowering arterial pressure, it has relatively few unfavorable side effects and does not compromise cardiac or renal function. The method and detailed results of our studies have already been described.<sup>7</sup>

### Studies on Hypertensive Patients

Twenty-five patients (12 men and 13 women) in the medical wards of the Los Angeles County Hospital were studied. Each patient had a diastolic pressure of 110 mm. of mercury or higher after admission to the hospital. No drugs had been used for the treatment of hypertension for two weeks preceding our study. Detailed information and laboratory data indicated no specific cause of hypertension in 22 of the patients. In two patients hypertension was related to chronic pyelonephritis, and one patient had polycystic kidney disease. The patients were observed for a control period before alpha-methyldopa was given, then for at least ten days of treatment, and for five to thirteen days after treatment was stopped.

After administration of alpha-methyldopa the blood pressure fell in every patient—in the standing as well as in the supine posture. These changes were highly significant for the probability that they could occur by chance is less than one in a thousand ( $p > 0.001$ ). In the five days following discontinu-

ance of the drug a significant reduction of blood pressure persisted. These effects are summarized in Table 1. Postural accentuation of the hypotensive effect in the standing position was prominent.

The effective amount of the levorotatory compound (or its racemic equivalent) ranged from 1.5 to 2.5 gm, administered in two or three divided doses daily; the one patient who received 3.0 gm had excessive postural hypotension. Sedative effects occurred in one-third of the patients but usually subsided by the second day, occasionally not until the third day.

The leukocyte content of the blood, blood urea nitrogen, serum creatinine, blood sugar content (fasting), and serum potassium were not significantly modified by the treatment. The hemoglobin concentration fell in all but three cases. The average change was from 14.1 to 12.7 gm per 100 cc of blood. A 5 gm fall in two patients was associated with increasing renal failure. Liver function tests, including serum bilirubin, bromsulfalein retention, alkaline phosphatase, thymol turbidity and serum transaminase, were not changed.

#### Hemodynamic and Renal Function Studies

Results of hemodynamic studies are summarized in Table 1. Only a slight decrease in the cardiac index occurred after blood pressure had been lowered. Venous pressure was slightly decreased. Perhaps most important, peripheral vascular resistance was reduced during therapy with alpha-methyldopa.

There was a concomitant reduction in heart rate from 82 to 75 beats per minute; in the work of the heart from 123 to 86 gm M per beat; and in the

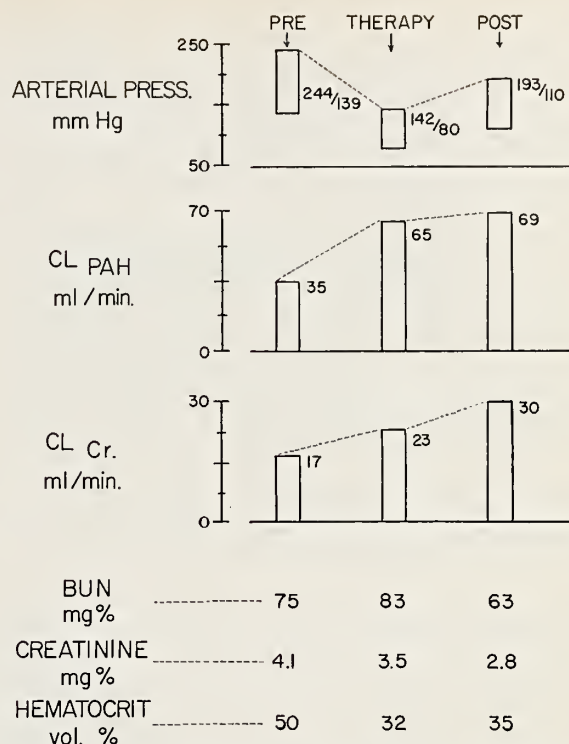


Chart 1.—Renal function during lowering of blood pressure with alpha-methyldopa (250 mg three times a day for ten days) in a 49-year-old woman with severe hypertension complicated by renal failure. CL PAH=para-aminohippurate clearance. CL Cr=creatinine clearance.

mean circulation time, measured by indocyanine green dye, from 14.5 to 13.1 seconds. A significant observation was an increase in plasma volume from 3.0 to 3.7 liters, which suggested that dilution was the factor responsible for the lower hemoglobin and hematocrit readings.

Creatinine clearance, a measure of glomerular filtration rate, increased in six of nine patients. In only one instance was a definitive decrease shown. Clearance of para-aminohippurate (PAH), an index of renal blood (plasma) flow, was not significantly altered. Mean values are shown in Table 2. As arterial pressure was reduced, clearance of PAH was unchanged and clearance of creatinine was increased. Serum urea nitrogen and creatinine were stable. The findings, therefore, gave evidence that treatment with alpha-methyldopa does not reduce

TABLE 1.—Hemodynamic Studies Before and After Treatment with Alpha-Methyldopa

	Before Treatment	During Treatment
Blood pressure*		
Supine .....	188/110	151/89
Standing .....	175/116	123/84
Venous pressure† mm Hg.....	7	5
Cardiac index† liters per minute per square meter of body area.....	2.9	2.6
Peripheral resistance† dynes sec.cm <sup>-5</sup> .....	2340	1850

\*Mean value in 25 patients.

†Mean value in 4 patients.

TABLE 2.—Renal Function Before, During and After Therapy with Alpha-Methyldopa

	Number Patients	Normal Range	Before Treatment	Ten Days of Treatment	Five Days After Treatment
Creatinine clearance (ml per minute) .....	9	90-130	68	91	78
Para-aminohippurate clearance (ml per minute) .....	9	500-700	382	450	409
Serum urea nitrogen (mg per 100 cc) .....	25	7-18	24	27	29
Serum creatinine (mg per 100 cc) .....	8	0.7-1.3	2.0	2.0	1.9



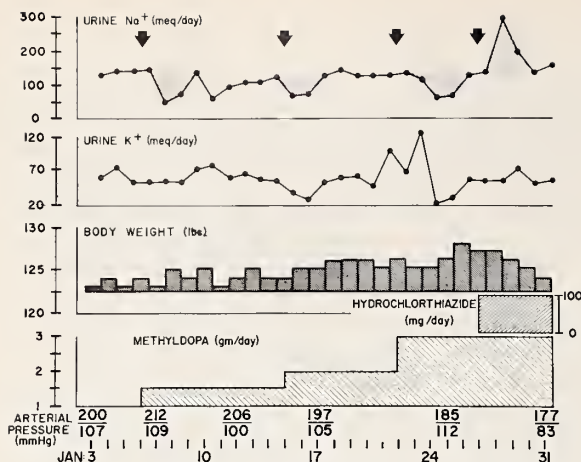


Chart 2.—Metabolic studies demonstrating sodium retention and weight gain with increasing amounts of alpha-methyl dopa reversed with hydrochlorothiazide, in a 57-year-old man with essential hypertension.

glomerular filtration rate but may result in slightly increased filtration. The index of renal blood flow remained unaltered. From a clinical viewpoint, it is reassuring that alpha-methyl dopa did not cause a decrease in creatinine or PAH clearance. In the patient in renal failure (illustrated in Chart 1) reduction in blood pressure from 244/139 to 142/80 mm of mercury was accompanied by improvement in clearance values. No significant elevation of the blood urea nitrogen occurred.

The hypotensive effect was not accompanied by sodium diuresis. To the contrary, treatment in three of four patients was followed by a net retention of sodium and a gain in body weight (Chart 2). Sodium retention was also observed when there was a relatively poor therapeutic response. No symptoms referable to sodium retention were noted by us, but other investigators have reported congestive heart failure as a potential complication of treatment. Metabolic studies in our hospital suggest that this is easily avoided by concomitant use of a thiazide diuretic, which also increases the effectiveness of alpha-methyl dopa as an antihypertensive drug. These features are illustrated in Chart 2.

Alpha-methyl dopa might prove particularly helpful in the treatment of patients with severe or malignant hypertension and renal failure. It has now been shown by us and by others that in lowering arterial pressure the agent does not significantly alter cardiac output. This is particularly desirable in patients who have vascular complications due to hypertension and arteriosclerosis. Lowering of renal artery pressure and cardiac work is essential, but lowering of cardiac output by use of ganglionic blocking drugs creates risks. Renal and coronary insufficiency are accentuated. Myocardial infarction

may occur as an acute complication, and renal failure is accentuated. This risk is minimized if arterial pressure is lowered by lowering peripheral resistance rather than cardiac output.

#### CLINICAL OBSERVATIONS

Since completion of detailed hemodynamic, renal and metabolic studies, we have had experience in the clinical use of this drug in an additional ten patients. A hypotensive effect usually was first manifest within eight hours after the oral dose was taken. The peak effect occurred between 12 and 24 hours, but occasionally it was delayed for as long as 48 hours. Reduction in blood pressure proceeded gradually. Thus, when administered in adequate doses the drug appeared to "normalize" blood pressure. Excessive or unpredictable hypotensive effects were rarely observed. Postural hypotension occasionally proved troublesome, but rarely so when the patients were forewarned.

The drug was well tolerated and had good patient acceptance. The only side effect consistently observed was sedation to the extent that the patient preferred to remain in bed during the first 24 hours after treatment was begun. We recently observed one patient who had transient abnormalities of liver function, and other investigators have observed fever with associated abnormalities in liver function tests. In no case has permanent injury resulted.

In addition to its antihypertensive action, alpha-methyl dopa often has a subtle tranquilizing (and often mood-lifting) effect which patients like. Occasionally quite the opposite is noted and the patient has subjective weakness and malaise. Tolerance to its antihypertensive action has been observed but the effectiveness is often restored by the addition of a thiazide diuretic, such as hydrochlorothiazide. Between 25 and 75 mg of hydrochlorothiazide may be administered along with each dose of alpha-methyl dopa.

#### CURRENT EVALUATION

At this time alpha-methyl dopa may be regarded as sufficiently free of toxic effects to justify its clinical use. However, the number of patients we have studied is small and more definitive reassurance would be premature.

Alpha-methyl dopa is likely to achieve an important place in the treatment of hypertension if its safety is confirmed in a larger number of patients. It probably ranks with reserpine-thiazide combinations in mildness of side effects, but outranks them in terms of potency. In turn it is outranked in potency by guanethidine and mecamlamine. It may well replace hydralazine, which also

has favorable effects on cardiac and renal function. However, hydralazine is less potent in its antihypertensive action and also is beset by a high incidence of unfavorable side effects.

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# Femoral Popliteal Bypass

## A Suggestion for a Modification

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THE GENERAL DISSATISFACTION with the long term results of femoral popliteal bypass with prosthetic vessels traversing the flexion crease has led to disuse of the operation by many surgeons, or to using it only for "last ditch" attempts at limb salvage.

Kinking of the prosthetic artery after it becomes stiffened by surrounding fibrosis, and reduction of the lumen by thick "pseudo-intima" are likely major factors in the development of the thrombosis that so often occurs.

Superior results have been demonstrated with vein bypass or thromboendarterectomy with vein patch. The technique described herein attempts to utilize the advantages of the latter procedures without the prolonged operative time, or the necessity for a saphenous vein of suitable length and calibre.

Submitted March 29, 1963.

- A simple technique for combining the advantages of autogenous vein patch, endarterectomy and the synthetic bypass graft is presented. The graft anastomosis is easily accomplished without compromise of the lumen, and is above the flexion area. A vein patch is carried down the endarterectomized popliteal artery, crossing the flexion area and ending just above the popliteal bifurcation. The time for the procedure is thereby shortened and the necessity for a saphenous vein of sufficient length or calibre for bypass grafting is eliminated.

The method avoids the kinking tendency of composite vein-synthetic graft, or end-to-end anastomosis of a synthetic graft to a patched artery on which endarterectomy has been done. It is particularly suited to cases of rather extensive popliteal

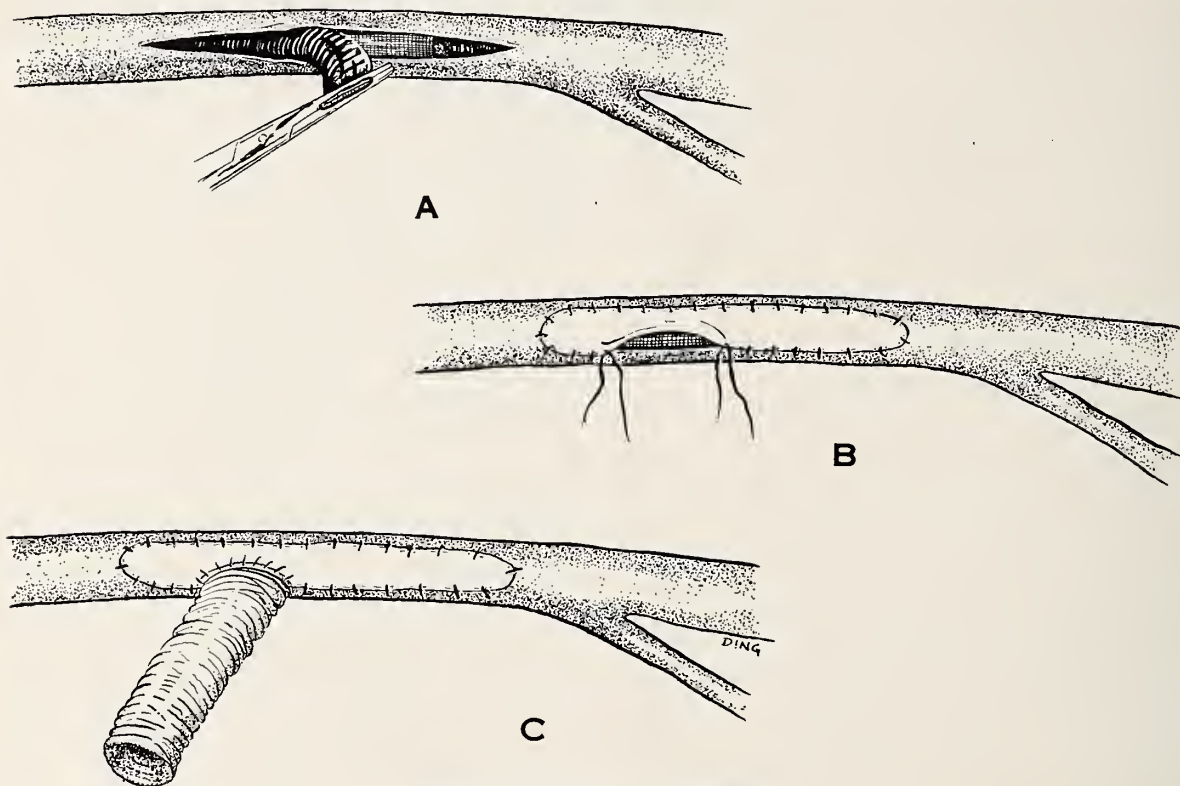


Figure 1.—See text for explanation



Figure 2.—See text for explanation

disease in which a low bypass crossing the flexion crease would be necessary. Using this technique the prosthesis ends above the flexion area and a vein patch insures good lumen below.

#### TECHNIQUE

Through a linear arterotomy a thromboendarterectomy is carried out from a few centimeters above the bifurcation of the popliteal artery up to a suitable area above the flexion crease (Figure 1, a).

A saphenous vein patch is then attached distally (Figure 1, b) and the anastomosis is run up the lateral aspect of the arterotomy and around the upper apex of the arterial incision. Another running suture is brought up medially and the two sutures are then tied individually near the upper end of the medial side of the patches. This leaves a suitable opening

at this level for anastomosis of the synthetic bypass graft.

A synthetic bypass is then sutured to this area in the usual fashion after attachment above to the common or superficial femoral artery (Figure 1, c). This results in a bypass attached above the area of flexion supported by the popliteal artery in continuity, and with a vein patch insuring good distal lumen.

Figure 2 is a postoperative arteriogram taken in approximately 95 degrees of flexion, showing the saphenous vein patch bridging the flexion area with a synthetic prosthesis proximally. In this case the prosthetic vessel was attached end to end to the superficial femoral artery. Note the absence of kinking in the area which was "vein-patched" across the flexion crease.

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# Perinatal Mortality and Survival

## A Comparison of Experience in California in 1949 and 1959

### PART I—STATISTICAL TRENDS

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WHAT ARE SOME of the characteristics of babies who live at least one month after birth as distinguished from those who do not survive? Demographic and medical data compiled from birth and death certificates show important differences. No other source makes available so great a volume of information for comparing groups of infants, although allowance must be made for incompleteness and possible misinterpretation of certain items.<sup>1</sup>

The California State Department of Public Health has made an analysis of descriptive items from 369,304 live birth and fetal and neonatal death certificates for the year 1959 and 252,400 certificates for 1949—the infant's race, sex, order of birth with respect to siblings, age of mother, maturity of the infant as measured by weight at birth, type of hospital and geographic area of birth. (Additional items, including father's occupation, infant maturity measured by gestation and length at birth, prenatal care, attendant at delivery and type of delivery were studied for 1959 and will be discussed in Part II of this report, to be published in a later issue.) Information was collected for all recorded births occurring in California (whether of a living or a dead infant) and the subsequent fatalities among living infants regardless of whether deaths occurred in this state or elsewhere. Neonatal death certificates were matched with original birth certificates to obtain as much data as possible about the deceased infants. If no birth certificate had ever been filed, an inquiry was made and a belated certificate obtained. For 39 infants in 1959 and 169 in 1949, no certificate could be obtained and the cases were dropped from the study; these were instances of unattended births, abandoned infants or cases in which the attendant could not be contacted.

#### Perinatal Mortality Trends, 1949-1959

If the time span of risk from perinatal death is defined as the period from 20 weeks of gestation

• The California State Department of Public Health has made an analysis of descriptive items from 369,304 birth and death certificates for 1959 and 252,400 certificates for 1949 in order to identify demographic characteristics associated with perinatal mortality and survival.

If the time span of risk of perinatal death is defined as 20 weeks gestation through 27 days after birth, 97 of 100 infants born in California during 1949 and 1959 were born alive and survived the first month of life. Fetal and neonatal death rates decreased over the decade to new lows. Since most of the improvement was among infants that weighed 2,501 grams or more at birth, a greater proportion of all perinatal deaths occurred among premature infants in 1959 than 1949. Survival chances for premature infants remained 75 out of 100 total births.

Trends shown by a comparison of the years 1949 and 1959 include a 47 per cent increase in number of births, proportionately more births to mothers under 20 and to women with four or more previous live births, more Negro births and fewer births outside a hospital.

An important gain in perinatal survival was found among babies of multiparous mothers. All types of hospitals had lower fetal and neonatal mortality, but county hospitals showed the greatest improvement. Less populated areas lowered their perinatal death rates more than major metropolitan areas when average rates for 1945-1949 and 1955-1959 were compared.

through 27 days after birth, 97 out of 100 infants born in California during the years 1949 and 1959 survived this perinatal period.

	1959		1949	
	Number	Per Cent	Number	Per Cent
Total births (live births plus fetal deaths).....	363,112	100.0	247,829	100.0
Fetal deaths .....	4,724	1.3	3,745	1.5
Live births .....	358,388		244,084	
Neonatal deaths .....	6,192	1.7	4,571	1.8
Surviving infants .....	352,196	97.0	239,513	96.6

Translated into terms of rates per 1,000 live births, the fetal death rate dropped from 15.3 to 13.2 during the decade, the neonatal death rate from 18.7 to 17.3. These were new lows for Cali-

From the Bureau of Maternal and Child Health, California State Department of Public Health, Berkeley 94704.  
Submitted February 21, 1963.

## DEFINITIONS

**Live birth**—The birth of an infant, irrespective of duration of pregnancy, which after complete separation from its mother shows any evidence of life.

**Fetal death**—The death of a fetus which after complete birth shows no evidence of life. In California, if it is of 20 or more weeks' gestation it must be registered.

**Total births**—Live births plus fetal deaths.

**Neonatal death**—The death of a liveborn infant in the first 27 days after birth.

**Perinatal death**—A death around the period of birth. In this report, a perinatal death is either a fetal or a neonatal death.

**Surviving infant**—An infant who is alive 28 days after birth. Survival per cents are calculated from total births (including both fetal deaths and live births). This gives a measure of an infant's chances of being born alive and living at least 27 days after birth.

fornia and continued a longtime trend. Neonatal death rates increased slightly during the period 1955-1958; 1959 was the first year the rate was lower than that in 1954. However, the rate of decline in neonatal mortality appears to have leveled off in California as it has in other states and other countries with relatively low death rates.<sup>2</sup>

Conditions associated with the prenatal period, birth and early infancy continued to be the most important cause of death among California children up to age 15, and three out of five of all deaths among children resulted from these causes both in 1949 and 1959.

The most remarkable trend of the decade was the 47 per cent increase in the number of babies born, reflecting the influx of new residents to the state rather than an increase in birth rate. Compared with 1949, 1959 births included proportionately more infants born to mothers under 20, more to mothers with four or more previous live births, more Negro births and fewer births outside a hospital.

Decreases in fetal and neonatal death rates have been principally among infants mature by weight at birth (2,501 grams or more) so that an increased proportion of all perinatal deaths occurred among infants weighing 2,500 grams or less at birth.

Table 1 shows changes in proportion of fetal deaths, neonatal deaths and surviving infants between the two years for several important demographic variables.

### Survival Differences—Birth Weight Groups

Improved fetal and neonatal death rates resulted in a small but significant increase in the chances of an infant's being born alive and surviving the first

month from 96.7 in 1949 to 97.0 in 1959. This means that 1,100 babies lived in 1959 who would have died if 1949 fetal and neonatal death rates still prevailed.

However, among premature infants lower neonatal death rates in 1959 were offset by an increase in fetal death rates for these low-weight births. Hence, survival chances remained 75 out of 100. Fetal death rates increased significantly for large premature infants (2,001-2,500 grams); the only increase in neonatal deaths was for the smallest premature infants (1,000 grams or less). Are fetal deaths more completely reported now than formerly? Is better medical management of pregnancies that would have aborted early now resulting in infants being carried past the 20th week and the births being registered? A slightly increased fetal death rate has been observed among nonwhites for the United States as a whole,<sup>3</sup> but not among whites.

Mature infants showed significant improvement in both fetal and neonatal death rates in 1959.

In only 0.2 per cent of all births was the birth weight not shown on the certificate in 1959, compared with 0.5 per cent in 1949.

### Trends for Racial Groups

Whites and Negroes shared equally in a small improvement in survival. This gain was principally due to lower fetal death rates for mature infants, particularly Negro babies. Orientals and other nonwhites increased their 1949 survival advantage still more in 1959.

### Mother's Age and Previous Live Births

In 1959 there were proportionately more mothers under 20 than in 1949 with a decreased per cent aged 25-29. In 1959, three-fourths (compared with two-thirds in 1949) of all births were to women who had already had at least one previous live birth. There has been a large increase in the proportion of mothers with four or more previous live births: it was 7.1 per cent of births in 1949, 13.5 per cent in 1959.

Of the variables studied, one which showed great survival improvement in the decade was the mortality rate among babies whose mothers had had several previous children. Some 600 babies born into families with four or more previous liveborn children survived their first month in 1959 who would not have lived if 1949 rates prevailed.

### Type of Hospital

All types of hospitals had a decrease in fetal and neonatal death rates, with the greatest improvement in county hospitals. County hospitals had a greater proportion of premature births in 1959 (11.6 per cent) than in 1949 (9.9 per cent). This may be due



TABLE 1.—Changes in Proportions of Fetal Deaths, Neonatal Deaths and Surviving Infants Between 1949 and 1959  
Outcome of Births—Selected Characteristics

Characteristics	Total Births (Live Births + Fetal Deaths)	Per Cent of Total Births		Total Births (Live Births + Fetal Deaths)	Characteristics	Total Births (Live Births + Fetal Deaths)	Per Cent of Total Births		
		Fetal Death	Neonatal Death				Fetal Death	Neonatal Death	
ALL BIRTHS	363,112 247,829	1.3† 1.5	1.7† 1.8	97.0† 96.7	PREVIOUS LIVE BIRTHS	101,468 88,462	1.3† 1.6	1.6 1.6	97.1† 96.8
BIRTH WEIGHT GROUPS					None	1959 1949			
Total premature	28,469 18,595	9.8* 9.2	15.6 15.7	74.6 75.1	1-3	1959 1949	1.6† 1.2*	1.6† 1.9	97.2† 96.8
1,000 grams or less	2,952 1,793	37.3* 40.9	58.3† 52.5	4.4† 6.6	4 and over	1959 1949	1.9† 2.5	2.2† 2.8	95.9† 94.7
1,001-1,500 grams	2,698 1,714	20.2 18.6	41.8† 46.4	38.0* 34.9	Not stated	1959 1949	136 487	8.8 8.8	42.6 86.4
1,501-2,000 grams	5,403 3,570	10.2 9.5	15.9* 18.0	73.9 72.5	TYPE OF HOSPITAL				
2,001-2,500 grams	17,416 11,518	3.3† 2.7	4.2* 4.8	92.5 92.6	County	1959 1949	45,623 31,826	2.4* 2.7	95.6† 95.0
Total mature	333,892 228,061	0.5† 0.7	0.5† 0.6	99.1† 98.7	Other tax supported (including federal)	1959 1949	50,679 20,348	1.2* 1.4	97.1* 96.8
Weight not stated	751 1,173	49.7 35.3	22.1 30.7	28.2 34.0	Private	1959 1949	262,430 189,953	1.5† 1.3	97.3† 97.0
RACE					Not in hospital	1959 1949	4,380 5,702	3.7* 2.9	92.4 93.4
White	323,215 226,997	1.2† 1.5	1.7* 1.8	97.1† 96.7					
Negro	28,532 14,171	2.1† 2.6	2.5 2.4	95.4* 95.0					
Other nonwhite	11,365 6,661	0.7 1.0	1.0* 1.4	98.3† 97.5					

\*Difference significant at 95 per cent confidence level.  
†Difference significant at 99 per cent confidence level.  
‡Fewer than five deaths.  
NOTE: Difference not tested for "not stated" categories.

TABLE 2.—Fetal and Neonatal Causes of Death, California, 1959 and 1949

International List Number	Cause of Death	Fetal Deaths				Neonatal Deaths							
		1959		1919		1959		1919					
		Number	Per Cent	Rate Per 1,000 Live Births	Number	Per Cent	Rate Per 1,000 Live Births	Number	Per Cent	Rate Per 1,000 Live Births			
ALL CAUSES.....		4,724	100.0	13.2	3,745	100.0	15.3	6,192	100.0	17.3	4,571	100.0	18.7
Y32.2, Y36.1-Y36.4.....	Maternal hemorrhage.....	1,059	22.4	3.0	821	21.9	3.4	.....	.....	.....	.....	.....	.....
Y69, Y32.3, Y32.4.....	Maternal toxemia.....	259	5.5	0.7	171	4.6	0.7	88	1.4	0.2	83	1.8	0.3
Y36.0.....	Cord condition without mention of placental abnormality.....	670	14.2	1.9	530	14.2	2.2	.....	.....	.....	.....	.....	.....
Y60, Y61, Y37.....	Birth injury.....	47	1.0	0.1	58	1.5	0.2	1,042	16.8	2.9	857	18.7	3.5
Y560, Y61, Y44, Y50-759, Y38.....	Congenital malformation.....	305	6.5	0.9	212	5.7	0.9	923	14.9	2.6	580	12.7	2.4
Y70, Y39.2.....	Erythroblastosis.....	248	5.2	0.7	109	2.9	0.4	182	2.9	0.5	147	3.2	0.6
Y62.....	Postnatal asphyxia and atelectasis.....	.....	.....	.....	.....	.....	.....	1,570	25.4	4.4	1,229	26.9	5.0
Y772-774, Y76, Y39.4-Y39.6.....	All other specified causes.....	1,038	22.0	2.9	825	22.0	3.4	588	9.5	1.6	351	7.7	1.4
	Ill-defined and unknown (includes prematurity, with no other cause specified) *	1,098	23.2	3.1	1,019	27.2	4.2	1,799	29.1	5.0	1,324	29.0	5.4

\*Includes hyaline membrane.

TABLE 3.—Five-Year Average Neonatal Death Rates, California Counties, 1955-1959 and 1945-1949 (By Place of Residence)

Counties By Area	1955-1959			1945-1949		
	Average Live Births	Average Neonatal Death Rate	Average Neonatal Death Rate	Average Live Births	Average Neonatal Death Rate	Average Neonatal Death Rate
CALIFORNIA .....	341,085	18.2	225,513	21.2		
North Coast Area, Total .....	4,495	18.5	2,410	22.4		
Del Norte .....	469	17.9	149	34.9		
Humboldt .....	2,628	17.7	1,338	20.5		
Lake .....	196	6.3	209	29.7		
Mendocino .....	1,203	20.8	715	21.3		
Sacramento Valley Area, Total .....	16,733	17.5	10,173	21.9		
Butte .....	1,534	18.4	1,321	25.0		
Colusa .....	253	11.9	249	15.3		
Glenn .....	354	9.6	316	13.9		
Sacramento .....	11,168	17.2	5,775	21.8		
Sutter .....	731	17.8	575	21.6		
Tehama .....	497	24.1	376	22.3		
Yolo .....	1,469	16.6	927	19.2		
Yuba .....	729	23.0	634	26.8		
Central Mountain Area, Total .....	2,672	14.9	2,288	19.9		
Alpine .....	7	.....*	1	.....*		
Amador .....	142	21.1	159	15.1		
Calaveras .....	153	11.8	156	12.8		
El Dorado .....	393	18.8	286	22.3		
Inyo .....	274	14.6	218	27.6		
Mariposa .....	72	19.3	79	22.9		
Mono .....	38	.....*	20	.....*		
Nevada .....	314	15.3	363	18.2		
Placer .....	1,012	11.9	777	18.5		
Tuolumne .....	266	15.8	230	22.6		
Northern Mountain Area, Total .....	2,936	20.6	2,324	26.9		
Lassen .....	318	21.4	414	31.4		
Modoc .....	188	20.3	197	43.7		
Plumas .....	251	21.5	287	29.3		
Shasta .....	1,241	19.5	704	27.6		
Sierra .....	47	.....*	26	.....*		
Siskiyou .....	699	21.2	630	15.6		
Trinity .....	192	25.0	67	38.8		
San Francisco Bay Area, Total .....	77,145	17.8	59,040	19.9		
San Francisco-Oakland .....	59,696	18.4	50,398	20.2		
Metropolitan Area .....	20,038	19.2	17,381	19.8		
Alameda .....						

Counties By Area	1955-1959			1945-1949		
	Average Live Births	Average Neonatal Death Rate	Average Neonatal Death Rate	Average Live Births	Average Neonatal Death Rate	Average Neonatal Death Rate
San Francisco Bay Area, continued						
Contra Costa .....	8,962	18.9	8,962	18.9		
Marin .....	3,021	16.1	3,021	16.1		
San Francisco .....	14,875	18.8	14,875	18.8		
San Mateo .....	9,219	15.1	9,219	15.1		
Solano .....	3,580	20.2	3,580	20.2		
San Jose Metropolitan Area .....	13,518	15.7	13,518	15.7		
Santa Clara .....	13,518	15.7	13,518	15.7		
Remainder of Bay Area .....	3,931	16.1	3,931	16.1		
Napa .....	1,061	15.8	1,061	15.8		
Sonoma .....	2,871	16.2	2,871	16.2		
Central Coast Area, Total .....	8,190	17.6	8,190	17.6		
Monterey .....	4,800	16.4	4,800	16.4		
San Benito .....	356	19.1	356	19.1		
San Luis Obispo .....	1,613	20.2	1,613	20.2		
Santa Cruz .....	1,420	18.2	1,420	18.2		
San Joaquin Valley Area, Total .....	33,213	17.2	33,213	17.2		
Fresno .....	8,601	17.8	8,601	17.8		
Kern .....	7,491	16.9	7,491	16.9		
Kings .....	1,304	19.3	1,304	19.3		
Madera .....	964	18.5	964	18.5		
Merced .....	2,575	15.9	2,575	15.9		
San Joaquin .....	5,228	16.7	5,228	16.7		
Stanislaus .....	3,345	15.4	3,345	15.4		
Tulare .....	3,704	18.6	3,704	18.6		
Santa Barbara-Ventura Area, Total .....	7,205	18.5	7,205	18.5		
Santa Barbara .....	2,811	16.2	2,811	16.2		
Ventura .....	4,394	20.0	4,394	20.0		
Los Angeles Metropolitan Area, Total .....	144,708	18.4	144,708	18.4		
Los Angeles .....	130,622	18.5	130,622	18.5		
Orange .....	14,086	17.0	14,086	17.0		
San Diego Area, Total .....	23,192	19.2	23,192	19.2		
San Diego .....	23,192	19.2	23,192	19.2		
Southeast Area, Total .....	20,595	19.3	20,595	19.3		
Imperial .....	2,071	21.6	2,071	21.6		
Riverside .....	6,741	19.6	6,741	19.6		
San Bernardino .....	11,784	18.8	11,784	18.8		

\* Rates not calculated for fewer than an average of 50 live births per year. NOTE: Rates are per 1,000 live births.



to an increased proportion of county hospital births to Negro mothers, who have a high incidence of prematurity. In 1959, 1.2 per cent of all births occurred outside a hospital, compared with 2.3 per cent in 1949.

#### Causes of Death

Table 2 shows changes in proportions of deaths from perinatal causes. Congenital malformations were reported more frequently as a cause of both fetal and neonatal deaths in 1959 than 1949. Comparisons of specific causes are hazardous because of the increased recognition of some causes and the smaller number of deaths assigned to ill-defined conditions. The group of neonatal deaths classified as ill-defined included hyaline membrane disease. However, this condition has become so frequently reported that it will probably be identified separately in future revisions of the International Classification used for coding causes of death.

#### Geographic Area

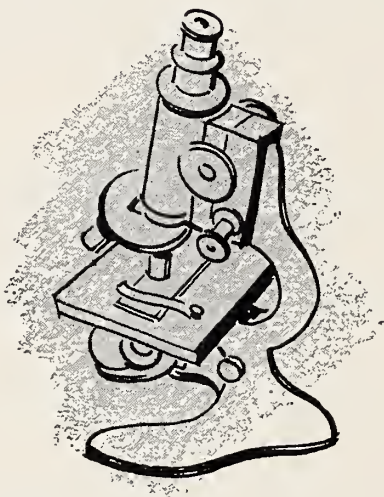
All geographic areas showed substantial improvement in both fetal and neonatal death rates, when five-year average rates for the periods 1945-1949 and 1955-1959 were compared (see Table 3). Death rates were reduced more in less populated areas than in major metropolitan counties. Some Central Valley counties which traditionally had very high neonatal death rates brought them down closer to the State average.

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# Cancer of the Cervix, Vulva and Vagina

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THE PURPOSE of this Chapter is to discuss the clinical aspects of cancers involving the uterine cervix, vulva and vagina. Since tumors of the lower genital tract have certain common characteristics they may be considered together. However, differences in clinical behavior in relation to their anatomic distributions lead to differences in recognition and management. For this reason they are usually discussed as separate entities. Since cervical carcinoma may be considered the primary problem of the lower genital tract it will be presented first so that the pertinent features of vulvar and vaginal cancer may be compared.

## Carcinoma of Cervix

Carcinoma of the uterine cervix is the most important malignant tumor of the pelvic genitalia, primarily because of its frequency. It is the most common such cancer and its incidence has been reported as 13 per cent of all cancers in the female, 52 per cent of all genital cancers in women. In recent years the absolute incidence of the disease in its invasive form appears to be decreasing. There is a tendency to attribute this decrease to the early recognition and treatment of the tumor in its pre-invasive stage. However, other factors cannot be discounted.

As far as etiology is concerned, the exact causative agent and the effect of environmental situation or genetic influence are not known. Most epidemiologic investigations indicate a relatively high incidence in persons in the lower socio-economic strata. There is some indication that the incidence of the disease is related to early sexual and reproductive activity. However, the etiologic features of the disease are not clearly delineated, despite intensive study.

Carcinoma of the cervix uteri is primarily a premenopausal and menopausal disease. The average age at the time of diagnosis is about 48 years. However, it sometimes occurs in the early 20s, and in elderly patients it is still more frequent than carcinoma of the corpus uteri, although the latter is primarily a post-menopausal disease. Classically, invasive cervical cancer is thought to be preceded

by a pre-invasive or *in-situ* stage. This clinical entity appears in patients whose average age is 38 years or some ten years earlier than invasive cancer. Actually, the pre-invasive disease is more frequent than the invasive, so that progression may not always be complete or regression of the pre-invasive lesion may occur in some instances. From a clinical standpoint, however, the time elements involved in progression from a pre-invasive tumor to an invasive one, allow for recognition in the earlier phase and the application of definitive treatment, which is usually highly effective.

If we assume that epidermoid cancer develops from a pre-invasive lesion over a long period, at some time the supporting fibromuscular stroma is invaded. The site of this change is classically at the junction of the glandular epithelium of the endocervix and the squamous epithelium of the portio. Usually, this site is at the external os of the cervix but may vary in individual instances, so that it may be on the face of the portio itself or be higher, within the cervical canal. In the latter instance, a cervical tumor may be covert and not recognizable on direct inspection.

With rapidly growing cells the first pathologic process is tumefaction, but in gross there may be no great change because of shedding of the surface cells. Eventually a mass appears which is surrounded by normal tissue. These tissues respond with a desmoplastic reaction in an attempt to wall off the rivaling tumor. In most instances this reaction is abortive or incomplete. Sooner or later cords and sheets of malignant cells spread beneath the mucosal surfaces and deeply into the surrounding tissues. Invasion by direct extension will follow the course of least resistance, and the classic pattern of spread is between the supportive connective tissue structures at the base of the broad ligament in a lateral direction toward the pelvic walls.

In addition to spread by direct extension, lymphatic permeation and spread may be superimposed. Lymphatic channels are plentiful in and around the cervix uteri and the main trunks pass laterally along the courses of the uterine vessels to the primary lymph nodes in the parametrium. These nodes are in relation to the great vessels in the pelvis along

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the lateral pelvic walls. Secondary lymphatic spread may occur to the inguinal areas or cephalad to the periaortic regions outside the true pelvis. In addition to these methods of extension there may be vascular spread to distant parts of the body.

In the usual course of events, however, local extension and pelvic lymph node involvement put the ureters at risk. Constriction of these structures by growing tumor results in stasis, infection and eventual renal damage. The result of local tumor growth is to produce uremia secondarily and often-times exitus occurs before distant metastasis becomes manifest. Complications other than uremia may occur. Prolonged bleeding leads to anemia and inanition; secondary infection leads to parametritis and pelvic peritonitis; extrinsic pressure on bowel leads to obstruction and toxemia; and lymphatic obstruction leads to lymphedema of the lower extremities, vulva and abdomen. All these processes result in considerable disability and pain over a chronic course unless uremia intervenes.

There are three cardinal symptoms: Abnormal bleeding, abnormal discharge and pain. A cervical tumor may slowly outgrow its support and then suddenly slough, with massive hemorrhage. However, the usual history is that of small amounts of painless bleeding not in relation to the menses. Post-coital bleeding is a common complaint and it may occur in the early phases of the disease. Although irregular bleeding is the most frequent complaint, the amount or type of bleeding cannot be correlated with the extent of the disease because of variations in the growth characteristics of individual tumors. An exophytic growth may produce a sizable hemorrhage and still be in an early stage of development. Conversely, an infiltrative tumor may be far advanced and yet not be ulcerated enough to cause extensive bleeding. Thus, a direct correlation between this symptom and prognosis cannot be made.

Carcinoma of the cervix may be associated with a thin, watery discharge which is usually an early symptom but, unfortunately, the amount and type of discharge is fairly innocuous and ordinarily does not disturb the patient. In later stages when secondary infection appears, the discharge may be thicker and perhaps odorous. This is more noticeable to the patient but is a poor prognostic sign because secondary infection may contribute to tumor spread or at least interfere with adequate treatment.

The third symptom of pelvic pain usually connotes advanced disease and a poor prognosis. Deep, constant pelvic pain may be due to nerve root involvement by direct extension of the tumor. Secondary infection with parametritis and pelvic peritonitis, too, may cause pain. As stated, both these situations

indicate extensive tumor advancement and are associated with late recognition of the tumor.

The diagnosis of cervical cancer, like that of other malignant diseases, is made definitely on the pathologic examination of excised tissue. However, the physical examination and certain diagnostic aids are most important.

In most cases of advanced lesions, gentle but thorough digital examination and inspection will result in a presumptive diagnosis of cancer, but verification by biopsy is needed to rule out chronic ulcerative or granulomatous lesions. On the other hand, patients presenting themselves because of symptoms must be examined thoroughly even though no obvious tumor is demonstrable in order to disclose an advanced covert lesion or an incipient change.

One of the most important advances in cancer control in the present era, widely used and practical for screening purposes, is the "Papanicolaou smear" examination. This is the cytologic study of exfoliated cells which may be indicative of a malignant change even though no overt lesion is demonstrable. Another diagnostic aid is the "Schiller test." It is done by painting the cervical portio and vaginal fornices with Lugol's solution. The normal mucosa stains a dark brown, but abnormal or suspicious areas do not stain because of lack of glycogen. The "Clark test," also helpful, entails gentle stroking of the endocervical canal with a sound. If brisk bleeding occurs, it merely indicates friability but increases suspicion of a hidden endocervical tumor. Colposcopy is a procedure to inspect the epithelium in vivo by magnification under direct vision. This procedure too will show suspicious areas which may need further study by biopsy.

Although originally it was proposed that the material for examination be obtained by aspiration from the vaginal pool, greater "yields" of early malignant changes have been produced by direct wiping of the endocervix and portio. Since the latter technique demands direct visualization of the cervix, it is more time-consuming than aspiration. Still, it is a simple and painless procedure which can be performed in the course of a routine office examination. Not only is cytologic examination becoming more and more accepted by the medical profession in general and by pathologists in particular, it has also been popularized among the laity. This has been an important development in the diagnosis of cervical cancer because the acceptance of this test has led to more persons presenting themselves for examination and hence the recognition of early tumors which can be controlled by adequate treatment.

In general, however, it is important to reiterate that definitive diagnosis is still a matter of histologic

rather than cytologic examination because of several limitations to the study. Smears may be read as negative, suspicious or positive, and classified in categories from one to six. Sometimes, because of secondary infection, necrosis or poor preservation of the cells, smears may be "negative" in the face of grossly obvious cancer. "Positive" smears may result from cellular atypia following previous radiation treatment or infection. "Suspicious" smears may appear with atrophy and secondary infection. It must be borne in mind that patients cannot be expected to evaluate the results of the test for themselves: A "negative" report may make them overly confident that no cancer exists; a "suspicious" report, which may be the result of a physiologic rather than a pathologic change, may frighten them unnecessarily. Furthermore, a report of "Class I or II," which is negative for cancer, may be interpreted by the patient as indicative of cancer. It is important, then, for all concerned to realize the limitations of such testing and to correlate the results with the symptoms and physical findings in the individual patient. Certainly, it is not wise to initiate definitive and radical treatment for cancer upon the basis of a single cytological examination alone. Periodic vaginal smear examination is strongly recommended.

Suspicious or positive results may be confirmed and usually further investigation and office biopsy will reveal the lesion. Such procedures are usually simple and painless and seldom are accompanied by complications. In the face of a positive smear, repeated examination will reveal a tumor which can be biopsied with the usual punch forceps or indicate an endocervical lesion which can be simply curetted. In such fashion the definitive diagnosis can be made. However, there are certain instances where a smear has been reported as positive and biopsies are negative; or in which repeated smears are suspicious in spite of clearing of local infection and atrophic changes. On such occasions it becomes necessary to proceed to a more diagnostic attempt by performing a fractional curettage and "cold knife" conical excision of the cervix under anesthesia.

It is important, with such a procedure, that all the tissues to be examined are carefully collected and preserved in order to accomplish the purpose of the study. However, wide conical excision of the cervix is not an innocuous procedure. Oftentimes it may be followed by hemorrhage of gross proportions and may later result in cervical stenosis. If a definitive diagnosis can be made without resorting to extensive measures it is usually the wiser course. Extensive trauma to and cauterization of an invasive tumor may result in necrosis, in secondary infection, in later hemorrhage and perhaps in extension of the lesion locally. In general, the most information one

can acquire with the least trauma seems to result in the greatest tumor control.

After definitive diagnosis by histopathologic examination, most tumors are classified by one or more means with the intention of assessing their prognosis. In the case of carcinoma of the cervix uteri, there are several types of classifications which are used. Of course, the histologic type is first noted and usually this tumor is epidermoid in character but may be an adenocarcinoma in about 5 per cent of the instances. Although some observers believe the glandular type of cancer may carry a poorer prognosis, it is probable that results of treatment are essentially the same, depending more upon the gross extent of the lesion than the histologic type. In addition, these tumors may be further classified as to the degree of de-differentiation or anaplasia of the histologic morphology. This is conventionally called the "grade," and a tumor showing a high degree of anaplasia is usually indicative of a poorer prognosis than is a more differentiated tumor. However, in carcinoma of the cervix, with the usual means of treatment, the histologic grade does not seem to have a great prognostic significance. This is due to the fact that most of the tumors show little maturity and perhaps other factors have more of an influence which overshadows this characteristic.

The growth type of the tumor, too, may be used as a method of classification. Exophytic or out-growing tumors seem to respond more favorably to treatment than endophytic or infiltrative lesions. An ulcerated lesion may not respond to treatment as well as an exophytic one, but perhaps better than an infiltrative lesion, depending upon the type of tumor from which it arose.

The clinical characteristic most closely associated with prognosis seems to be the gross extent of the tumor. This is evaluated usually by clinical examination before treatment is initiated and conventionally is referred to as the "stage" of the lesion. There have been several such classifications, but the one commonly accepted is the International (or League of Nations) classification. Briefly, it includes: Stage I—those lesions which involve the cervix alone. Stage II—lesions involving the cervix, parametria without fixation to the pelvic wall, and/or the vagina without extending to its lower one-third, and/or the uterine corpus. Stage III—lesions which are fixed to the pelvic wall and/or involve the lower one-third of the vagina. Stage IV—lesions extending beyond the true pelvis or to the mucosa of bladder or rectum, or showing distant metastasis. This gross classification can be subdivided into further classifications to differentiate large and small invasive tumors of the cervix; those that involve the parametria or the vagina primarily; or those which show generalized dissemination, as compared to mucosal



involvement of the adjacent organs. Further, the pre-invasive lesions may be separately classified as Stage O. These special classifications refer to cervical cancer only; they have the advantage of being universally accepted but they have the disadvantage of being complicated.

The State of California Tumor Registry uses a gross classification which is simpler and may be applied to malignant tumors of all sites. Stage I is localized to the primary organ; Stage II shows regional extension or lymphatic spread, and Stage III is disseminated tumor. In California statistical reports on carcinoma of the cervix, in-situ or pre-invasive lesions are included as Stage I. This is not true for the International statistics collected at Stockholm.

As far as treatment is concerned, the general philosophy is to apply radical measures as a primary therapeutic attempt in invasive cancer. The limitations of clinical evaluation as to the exact extent of the lesion, as well as the known propensity for even grossly early tumors to show imperceptible lymphatic metastasis, demand that all patients be treated as if extension has already occurred. The almost universal failure of secondary treatment measures, after incomplete primary attempts, emphasizes the necessity for "radical" application of therapy in the first instance.

Modifications of this general philosophy occur mainly in the management of pre-invasive tumors. If there is adequate evidence that the lesion in question is totally in-situ and there is a desire to preserve reproductive function, such cervical lesions can be managed by conservative means. Dilatation and curettage, wide conical excision and continuous follow-up examination will allow for maintenance of the reproductive function in young persons. Because of the long interval usually assumed in the development of true or invasive cancer and the efficacy of diagnostic measures in recognizing pre-invasive changes from cytologic studies if they should remain or reappear, such controlled management entails little risk. This is especially true in young women, in whom in-situ changes are much more frequent than invasive cancer.

In women in the menopausal or post-menopausal years this is not true. Invasive cancer is much more frequent than the pre-invasive lesion. Here there is no question of maintaining reproductive or even ovarian function. Although some investigators advise conservative measures in all instances of carcinoma-in-situ, usually in older persons the treatment is radical, as though the lesion were an early invasive one.

Pre-invasive cancer usually is recognized in women in their late thirties and early forties. Since most of them have fulfilled their reproductive functions and

still have some years of expected ovarian function, the common mode of management is complete hysterectomy with ovarian preservation. Radiation therapy would ablate the ovaries, and conservation of the cervix would leave some doubt as to complete control in the future, so that surgical management remains the most widely used method of treatment. It must be emphasized, however, that the removal of the uterine corpus does not completely eradicate the cellular changes in the area at risk. It is also necessary to remove any suspicious or non-staining epithelium on the portio or in the vaginal fornices if the procedure is to be technically adequate. Further, it is necessary to continue clinical observation and cytologic studies in order to recognize a residual or new malignant process in the apex of the vaginal vault.

In most areas the general method of management of invasive carcinoma of the cervix is by radiation methods. Most techniques include external irradiation from an x-ray machine or tele-cobalt apparatus, as well as intracavitary radium or other radioisotope applicators. These modalities are combined to deliver theoretically adequate doses of radiation throughout the entire pelvis to include the areas at risk.

The combination of external and intracavitary methods must be carried out in a planned fashion so that dangers from complications due to over-irradiation, as well as under-irradiation, may be avoided.

In general, the local radium application seems to be the most important phase in early tumors, and the external radiation phase of treatment is the most critical in the advanced lesions. In the latter instance, if there is evidence of extensive tumor spread, it is necessary to deliver large amounts of radiation in a uniform distribution throughout the large tissue volumes involved. In the early cases, doses pushed beyond optimal and tolerable limits may result in excessive numbers of distressing complications without improving chances of tumor control and survival.

Although the exact techniques are complicated, adequate apparatus and personnel are available in nearly all areas of this country, so that expert radiation therapy may be applied.

Some physicians prefer surgical therapy to radiation in the management of early invasive cervical cancer. The operative approach again is radical and technically includes extirpation of the lymphoid tissues along the pelvic vessels, the parametria and the upper vagina as well as the uterus and adnexa. The main technical difficulty lies in the management of the ureters and the bladder base, which are within the lines of excision. Injury to these structures or to the blood vessels supplying them may result in distressing complications. Although over-

all results from management of this type in select cases are similar to those for radiation therapy in comparable cases, the incidence of major complications is much higher. For this reason radiation therapy is the method of treatment most often used.

There are variations in the primary radical approach to management which have had variable popularity. Combinations of surgical and radiation modalities have been proposed through the years. Generally speaking, the improvement in results obtained by radical excision after radical radiation therapy is not enough to warrant the more extensive complications usually associated with this method. The normal tissues which must support the extensive trauma of both methods of treatment are unable to recover satisfactorily. Because of this there have been modifications directed at reduction of the amount of radiation or of surgical trauma. Results from such modifications have not proved to be superior to those from primary radical operation or radical radiation therapy alone. Along these lines there has been a renewed interest in the radical vaginal hysterectomy of Schauta. This technically difficult procedure is effective in control of local tumor and its vaginal extension, but does not allow for lymph node dissection. The latter must be performed as a secondary retroperitoneal lymphadenectomy, or the nodal areas must be subjected to extensive secondary radiation therapy in order to fulfill the principles of tumor control.

Results of treatment seem to be steadily improving over the years. Apparent five-year survival rates for the pre-invasive form approach 100 per cent in treated series regardless of the method of management. Moreover, the results of treatment for invasive cancers have improved steadily, not only because of the gradual increase in the proportion of patients who are treated when the tumor is in an early stage but also because of improvement in treatment techniques.

As reported from Stockholm, the International collected results of treatment (five-year survival) of carcinoma of the cervix for the years 1950 to 1954 inclusive, are as follows: Stage I, 73.2 per cent; Stage II, 51.2 per cent; Stage III, 26.7 per cent; Stage IV, 7.3 per cent.

Prophylaxis is a most important feature in the management and control of this disease. If we understood the etiologic background of the disease process, it is possible that many cases could be avoided. Continued interest in epidemiology and case reporting may give us pertinent information. Extensive efforts to diagnose the premalignant and pre-invasive phases of the disease process, when it is amenable to fairly simple therapeutic measures, seem fruitful. Certainly continued improvement through the use of exfoliative cytology and more

frequent pelvic examination is to be expected. The fact that early stages of the invasive disease respond so much better than late stages makes increased suspicion as to the cause of symptomatology on the part of physicians and laity most important. Educational programs have been directed at this phase and have been effective. As far as treatment techniques are concerned, increased interest in radio-physics and radio-biology has certainly been important in a gradual improvement in results. Extended surgical procedures have been explored and found effective in control of very extensive or secondarily recurrent tumors, even though the overall yield in survivals has been low insofar as comparison to the morbidity, mortality and over-all effort is concerned. So far, the use of adjuvant chemotherapy has been important only in palliative management, but certainly we can hope for more effective treatment measures in the future. In general, however, future improvement in tumor control seems based on the increased interest in the disease and a change from late, difficult treatment problems to early, more amenable tumors through early diagnosis.

#### **Carcinoma of Vulva**

Carcinoma of the vulva is the fourth most frequent malignant disease of the pelvic genitalia. It represents less than 1 per cent of all cancers in the female and 3 per cent of all genital cancers. It is primarily a post-menopausal disease. The average age of patients is 60 years.

Etiologically, it has been associated in the past with a concomitant incidence of syphilis, but this does not seem to hold in recent years. Usually it is thought to be a degenerative process because of its association with the atrophic changes in the post-menopausal years. There has been some recent interest in the association of this malignant disease with condylomata appearing in earlier years and treatment by sclerosing medications or low voltage x-rays. However, it is difficult to ascertain whether condylomata may be precursors to malignant change or the treatments were carcinogenic. The situation is similar to that in carcinoma of the cervix in that the cause is far from certain but interest in etiologic features is prominent.

The usual pathologic feature in association with vulvar cancer is leukoplakia—white patches on the vulva, which occur in association with about 50 per cent of the instances of vulvar cancer. The process is thought to be pre-malignant. There is some confusion as to what leukoplakia actually represents grossly, because such white patches may appear with vitiligo, tinea cruris, lichen planus et atrophicus and other diseases. However, the leukoplakia which is thought to be a precursor to cancer



is described as lichen hypertrophicus, since there is not only atrophy of skin folds but also hyperkeratosis in the epidermis. Certainly vulvar cancer does not develop in all patients with leukoplakia, but at least it seems to be a precursor in many instances.

From the pathologic standpoint the entire vulva must be considered a single organ. It is subjected to various traumata of reproduction and of infection, and is responsive to hormonal stimuli. The epidermal structures covering the labia major and minora, the clitoris and vestibule, as well as the lining of the Bartholin ducts and glands, are subject to malignant changes. The usual atrophy and subsequent premalignant changes may involve parts or all of these structures. The extensive lymphatic circulation in these areas, with drainage to the superficial and deep inguinal nodes and contralateral connections, makes malignant tumors at these sites more difficult to manage than such lesions on other skin surfaces.

In the usual course of events, one or more areas will slowly proceed through a pre-malignant to a pre-invasive malignant transformation. Eventually invasion into the submucosal or subcutaneous tissues will occur, with tumefaction and later ulceration. Direct extension into vagina, urethra and anus will occur with partial obstruction and secondary infection. Superimposed upon these processes, lymphatic involvement will cause vascular obstruction, edema of the lower extremities, and nerve root pain. The process of development and extension is slow and usually is accompanied by considerable discomfort because of proximity of the lesion to the excretory orifices. Prominently one sees secondary infection, fistula formation, ulceration, hemorrhage and gradual inanition. Distant metastasis may occur but death is usually a result of the local destructive process.

The most frequent presenting symptom of a patient with vulvar cancer is pruritis. Of course, pruritis may be a symptom of a number of benign conditions and it may result from concomitant conditions rather than from the cancer itself. Ulceration with hemorrhage is a later symptom which may be associated with trauma or scratching of the vulva. Urinary difficulty, bowel obstruction and lymphedema are all late complaints and indicate a poor prognosis.

Diagnosis again depends upon complete visual and digital examination and biopsy upon the recognition of a lesion. In most instances, biopsy may be done as a simple office procedure with local anesthesia and without complication. Before treatment is considered, suspicious areas of leukoplakia or tumor should be tested by biopsy lest an incomplete procedure be carried out or an unnecessarily radical treatment be applied.

It should be noted that although it would seem the pruritis, bleeding or mass associated with vulvar cancer would disturb the patient enough to make her seek medical aid early, this is not generally true. Often embarrassment or ignorance or optimism causes long delay. Furthermore, some physicians are reluctant to examine elderly, excessively modest patients thoroughly, deferring biopsy of these easily accessible lesions in favor of conservative, symptomatic treatment with hormones, topical medication and various types of physiotherapy.

As in cervical cancer, after diagnosis, vulvar tumors may be variously classified. Usually the tumor is epidermoid histologically, but occasionally an adenocarcinoma which arises from the Bartholin gland may be present. The histologic grade of the tumor may again be classified according to the degree of differentiation. Many of these tumors are fairly mature, and there seems to be some correlation between this feature and ultimate prognosis.

As far as gross features are concerned, classifications may be made as to the site of origin of these tumors. Thus, they may be designated as: labial, preputial, vestibular, clitoral or vulvo-vaginal gland types.

Assessment of the gross extent of the lesion is made in some form of staging. There is no generally accepted classification in vulvar cancer as there is in cervical cancer, but in general the following characteristics are used:

Stage I—Small lesions under 3 cm in diameter.

Stage II—Lesions over 3 cm in diameter but not extending to urethra, vagina or anus and without palpable inguinal nodes.

Stage III—Lesions showing clinical evidence of extension to adjacent structures, or grossly involved inguinal nodes.

Stage IV—Disseminated disease, fixed locally to adjacent organs or with fixed technically irremovable nodal involvement.

As in other malignant diseases the simple gross staging utilized by the State of California Tumor Registry may be applied. Again, the three stages of localized tumor, regional or nodal involvement, and disseminated or metastatic disease, are applicable.

As to prognosis, there is definite correlation between ultimate outcome of treatment and the gross extent of the tumor at the time of application.

The primary method of management of vulvar cancer is surgical. In scope the operation should include the entire primary organ and the tissues in the areas of lymph node extension. The classical operation now is a one-stage radical vulvectomy with bilateral superficial and deep lymph node dissection. Local excision of the tumor, partial or unilateral

vulvectomy, and the like are obviously incomplete procedures and usually are inadequate because of the profuse lymphatic network in and around the vulva. However, as the accepted classical procedure is an extensive one, it may be too traumatic for some of these elderly patients. For this reason various modifications toward conservatism have been advocated. One-stage bilateral superficial groin dissection and vulvectomy has been suggested for patients considered poor operative risks. The addition of the deep dissection of the secondary nodes may not add appreciably to the salvage if they be involved but it does add to the difficulty of the operation, to the severity of complications and to the length of convalescence.

Other modifications may be to perform the vulvectomy and node dissection in two or three stages, allowing for recovery and local healing after each.

In some instances of Stage I tumors of low histologic grade in obese, aged or debilitated patients, the surgeon may elect to do vulvectomy only, deferring groin dissection until clinical evidence of involvement has occurred.

All such modifications will obviously be detrimental to the chance of survival for the patient, but must be considered when the constitutional condition of the patient will not permit the accepted radical method of management. It is only in cases of limited leukoplakic or in-situ carcinoma that simple vulvectomy is considered adequate. This procedure must be extended to encompass the entire organ and areas of perianal skin which have undergone change.

Radiation therapy has not been as effective as surgical excision in the management of carcinoma of the vulva. Although the tumors themselves may be responsive to ionizing radiation, the surrounding vulvar area cannot tolerate intensive radiation injury. The skin folds and excretory orifices are usually moist, contaminated and subject to excessive maceration, which limits their tolerance. The same is true of the inguinal areas to a lesser degree. However, in many instances, because of extension of the disease beyond the scope of adequate excision, or because of constitutional complications, vulvar carcinomata may be managed by radiotherapy.

Often irradiation with radium applied locally by the use of plaques or molds or by interstitial implantation will give good local control. Inguinal areas can be treated with protracted techniques and with supervoltage generators which have advantages in their "skin-saving" characteristics. Even with advanced lesions, satisfying palliative results may be obtained by meticulous radiotherapy, so this modality should not be completely abandoned.

When one considers the possibilities of management and control of this disease in the future, the

first consideration must be that of prophylaxis. In vulvar cancer the word *prophylaxis* has practical meaning because of the association of leukoplakic vulvitis with subsequent carcinoma. A leukoplaque is oftentimes symptomatic, can be observed easily and a specimen for biopsy easily obtained, and is amenable to treatment. Treatment by topical applications, hormone creams and low frequency radiations is usually not efficacious, but simple vulvectomy is applicable. This operation, when performed adequately, is not too difficult technically nor too disfiguring anatomically to apply more frequently than it is.

Early diagnosis of vulvar cancer is difficult mainly because of the reluctance of patients to consider the possibility of the disease and to present themselves for examination. Further, physicians in general apparently are not as alert as they ought to be to cancer at that site.

As far as treatment is concerned, efforts can only be made to increase the physician's concern as to the seriousness of these lesions and the necessity for as radical management as possible within the limitations of the patient's constitutional condition.

At present, the usual five-year survival data show an over-all rate of 36 per cent. The California data show five-year survival for the various stages as: Stage I, 60 per cent; Stage II, 16 per cent; Stage III, less than 10 per cent. It is obvious that vulvar cancer if treated while in localized stages carries a fairly acceptable prognosis.

#### Carcinoma of Vagina

Primary vaginal cancer is extremely rare. The reported incidence as shown by data from the California Tumor Registry is less than 1 per cent of all genital cancers and 0.2 per cent of all carcinoma in females.

Usually these tumors occur in post-menopausal patients and the most common sites are the upper vault and the fornices. It has been suggested that chronic discharge and irritation have a causative influence, but in view of the rarity of this disease and the frequent occurrence of discharges, this seems unlikely.

Primary vaginal cancer is usually an epidermoid tumor. It develops as either a unicentric or a multicentric lesion in the vault. It may appear as an *in situ* or superficial lesion; eventually it spreads submucosally and invades. If it appears in the upper vault, extension is along the base of the broad ligament; if it begins in the lower half, it may spread into the vestibule and vulva. Because of the proximity of the bladder and urethra anteriorly and the rectum posteriorly, direct invasion of these organs occurs early in the course of the disease. Superimposed upon direct extension of this kind is the



possibility of lymphatic permeation and spread. In the case of lesions of the upper half of the vaginal vault, lymphatic spread follows the same routes as do lesions primary in the cervix; spread of tumors in the lower half may follow vulvar routes. In addition, mid-vaginal tumors may spread into the perirectal lymphatic channels and circumscribe the rectum to the posterior sacral nodes.

Growing tumors will eventually ulcerate and bleed. They are prone to secondary infection which may result in pelvic cellulitis. Involvement of the bladder and rectum will result in obstruction and/or fistula formation, and in cases in which the patient dies death is usually owing to complications of local involvement.

In addition to epidermoid carcinoma, another rare primary cancer of the vagina is the mixed Mullerian sarcoma of infants, *sarcoma botryoides*, so named because on gross examination it has a grape-like appearance. This cancer is extremely rare and exceedingly malignant, growth filling the vagina and invading bladder and rectum promptly. Vascular metastasis to distant sites occurs in most cases.

Symptoms associated with vaginal cancer are, again, leukorrhea, abnormal vaginal bleeding and pain. Leukorrhea, as in carcinoma of the cervix, may occur in early stages but is not dramatic enough to concern the patient. The abnormal bleeding is also similar to that in carcinoma of the cervix; it is frequently post-coital. The significance of pain is similar to that of cervical cancer. Moreover, pain may indicate bladder or bowel involvement and obstruction.

Suspicion raised in reference to symptoms demands thorough investigation with adequate palpation, visualization and biopsy of demonstrable lesions. The exact site of a lesion in the vault may

be difficult to demonstrate. Examination in the knee-chest position and the use of Lugol's staining are frequently helpful. Smears can be important, as exfoliated cells may be available for collection and examination.

Classifications again are helpful. These include the histologic grade and the gross extent of the disease—the "stage." The former cannot be directly correlated with prognosis because of the rarity of the disease, hence the paucity of data. The extent of the growth of course has great prognostic significance.

Primary carcinoma in the upper vaginal vault is usually treated by radical radiation therapy. External radiation is similarly applied but application of radium must be individually designed to encompass the local tumor. Bombs and interstitial needle implantations are frequently useful. In most instances the entire vault must be irradiated and special vaginal applicators have been designed for this purpose. These are especially useful in treating mid-vaginal lesions. In lesions of the lower half the primary treatment may be surgical, the principles being the same as for vulvar cancer. However, many of these lesions are advanced or show local extension into bladder and rectum. In such instances extended surgical procedures, such as anterior, posterior or complete exenteration must be considered.

Prognosis is generally poor in this disease. The California Tumor Registry does not have data on survival for any large series.

As far as future management and control of the disease are concerned, the same principles must be applied here as in the other diseases previously discussed. Hopes for improvement in prognosis can only be realized by finding lesions early. Hence the need for a high degree of suspicion and increased care in examination and testing.

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# CASE REPORTS

## Fibrosarcoma in the Antrum of a Child

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FIBROSARCOMA, not a common tumor in the head and neck area, entails certain problems in management, depending on the anatomic location and the cellular pattern of the lesion. It is a tumor which can appear at any age and has no predilection as to sex or race. In persons less than 15 years of age, sarcoma in general is seen nine times as frequently as carcinoma.<sup>1</sup> Fibrosarcomas may arise from the mesodermal portion of the dental follicle. In the case here reported an antral fibrosarcoma developed in a boy with an unerupted third molar.

### REPORT OF A CASE

A 14-year-old white boy was admitted to hospital with complaint of toothache for several months. A month before admission, a soft, bluish-red tissue growth had been noted in the right third molar area, with associated loosening of the second molar tooth. The lesion (Figure 1) grew rapidly, became lobulated and bled easily when traumatized. Biopsy had showed it to be a highly cellular myxofibroma or fibrosarcoma. Radiographs showed an unerupted, partially formed third molar with a soft tissue mass almost filling the right maxillary antrum. A film of the chest showed no abnormality.

To be prepared for whatever procedure was necessary, anesthesia was induced with sodium thiopental, routine face and oral preparation with aqueous zepherin was carried out and the throat was packed with wet gauze against an intratracheal tube. Biopsy of the bulky tumor was done and the report on frozen section was fibrosarcoma. Thereupon the eyelids were approximated with a fine suture to protect the cornea and a Weber-Fergusson incision was made close to the ala, running up to the inner canthus and then laterally close to the palpebral margin. Next incision was made in the gingivobuccal fold, and the cheek flap, including the buccinator muscle, was reflected. The upper third of the max-



Figure 1.—Two cm exfoliating tissue growth (it was bluish-red) in the right third molar area.

illa was transected with a Stryker saw, most of the infraorbital rim and floor of the zygoma being preserved. A chisel was used to separate the posterolateral attachment of the maxilla from the pterygoid process of the sphenoid bone. The canine and first premolar teeth were extracted and a chisel was used to transect the hard palate to the junction of the soft palate. Bone-holding forceps were applied and, using chisels and heavy scissors, the tumor was freed and removed. The wall between antrum and nasal cavity was included with the specimen. The mucous membrane lining the antrum was removed and the ethmoid sinus was curetted. All raw surfaces were covered with a split skin graft. The operative defect was packed and the cheek flap resutured in its normal position. The lesion was well circumscribed and pseudoencapsulated (Figure 2).

The pathologist reported the right antrum contained a large, soft, hemorrhagic mass of spongy, mucoid tissue. Microscopic examination showed an extremely vascular tumor made up of highly pleomorphic elements (Figure 3). The chief element was a collagen-producing cell with long sinuous processes distributed in a loose fibromyxoid stroma. Widespread necrosis and many bone sequestra were

Submitted December 17, 1962.





Figure 2.—Operative specimen—resected right antrum well encompassing pseudoencapsulated soft tissue lesion within.

noted. Mitotic figures were scattered widely through the tumor, and there was a considerable reactive inflammation-infiltrate. There was a moderate degree of acanthosis of the mucosa overlying the tumor. The impression was that the lesion was a low-grade fibrosarcoma.

At last examination 12 months after operation, no evidence of recurrence of disease was observed.

#### DISCUSSION

Fibrosarcoma in the area of the head and neck is uncommon although there have been sporadic reports of such tumors in the tongue, orbit, pharynx, lip and antrum. The tumor is one of supportive tissue containing the keystone cells, fibroblasts, and a matrix of collagen and reticular fibers. It may start as a small nodule and grow to great bulk, occurring at any site. In cases of well differentiated tumor the cells are relatively uniform, without much hyperchromatism and with few or no mitoses. The histologic features can give a clue as to the tumor's probable future behavior. The more anaplastic the pattern, the more likely it is to invade, to grow rapidly and to recur. In one reported series the survival rate for patients with well differentiated lesions was 96.2 per cent against 49.9 per cent for those with anaplastic tumors.

Survival seems to be related to the location and origin of fibrosarcomas. Those that arise in skin (excluding scar) very seldom spread to other sites and, except for persistent, locally infiltrative growth, rarely show any other evidence of malignancy. In general, fibrosarcomas of soft parts recur after treatment in more than half of cases because of their tendency to infiltrate beyond palpable mar-

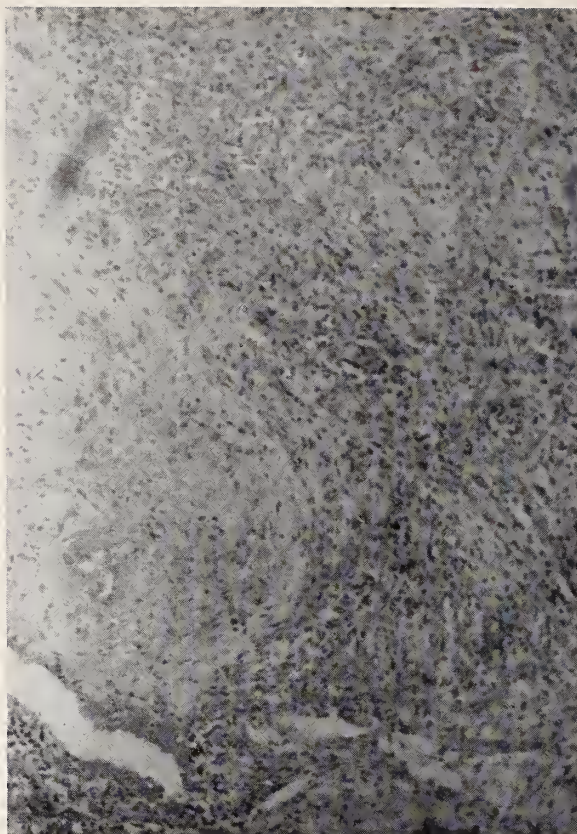


Figure 3.—Microscopic view showing vascular tumor made up chiefly of fibroblasts and highly pleomorphic elements and mitotic figures ( $\times 40$ ).

gins. Metastasis occurs in less than 10 per cent of anaplastic fibrosarcomas of soft parts.

The growth pattern is also very unpredictable. Some fibrosarcomas grow steadily and infiltrate surrounding structures. Others, for no known reason, may stop growing for months or years, then resume malignant activity.

The most highly malignant anaplastic fibrosarcomas are those of the thigh and lower extremity. Perineal lesions are relatively benign and metastasis seldom occurs. Periosteal lesions invade bone secondarily and are more malignant.<sup>3</sup> Metastasis to the lungs, vital organs and extensive local infiltration brings about the patient's death.

Before deciding on management, one must know the approximate anatomic confines of the lesion and biopsy must be done to determine the histologic structure. With surgical excision, including a margin of normal tissue is advisable to minimize the risk of local recurrence. Regrowth occurs early if any of the lesion remains.

Radical resection of the orbit and adjacent sinuses may not be necessary in dealing with fibrosarcomas of the maxilla and the alveolar ridge, for, unlike carcinomas, they have little tendency toward



metastasis. One problem in this connection is that sometimes it is difficult to tell whether a lesion is benign or malignant, even with histologic examination. However, destruction of the bony anterior maxillary sinus wall, pain and progressive growth implies a malignant character. Fibrosarcoma is exceedingly radioresistant, but an occasional tumor may respond to radiation therapy.

#### SUMMARY

An antral fibrosarcoma with dental involvement in a 14-year-old boy was radically excised and there was no evidence of recurrence a year after operation.

The prognosis of fibrosarcoma depends on the location and the degree of cellular differentiation.

8820 Wilshire Boulevard, Beverly Hills (Karlan).

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### A Case of Probable Scurvy in the Citrus Belt

JOHN H. YOELL, M.D., Santa Monica

THE COMBINATION of hemorrhagic phenomena and hypovitaminosis C is well known, but certainly not a problem one expects to find in a region (San Gabriel Valley, California) long famous for its citrus industry and where almost every home has an orange or lemon tree in the backyard. Yet the following case stresses again that vitamin C deficiency should be considered in any patient with spontaneous bleeding.

#### REPORT OF A CASE

A 45-year-old white woman entered Glendora Hospital because of profuse and unrelenting nose-bleed for two days. The episode was acute in onset. There were no other hemorrhagic manifestations. Despite multiple posterior nasal packs the mucosa continued to ooze.

Blood pressure at the time of admittance was 122/76 mm of mercury. Platelets numbered 110,000 per cu mm at one determination and 230,000 at another. Bleeding time (Ivy) was 1 minute 40 seconds, coagulation time (Lee-White) 4 minutes 30 seconds, and prothrombin time by the Quick one-stage method was normal. Clot retraction complete at 12 hours. Serum proteins, calcium and phosphorus were within normal limits.

Submitted April 9, 1963.

Review of history elicited that the patient had been previously on a restricted diet for peptic ulcer. Further questioning by her attending physician brought out that she had neglected supplemental vitamins prescribed for the dietary period. At this point a serum ascorbic acid determination performed on a fresh specimen gave a value of 0.24 mg per 100 cc (normal: 0.6 to 2.0 mg). Large doses of ascorbic acid were given parenterally and dramatic relief of symptoms promptly followed. When the patient was observed six months later there was no evidence of recurrence.

#### COMMENT

The prostrate scorbutic patient with loose teeth and bleeding gums belongs largely to the past or to those situations in which one attends indigents of the "skid row" type. Otherwise scurvy is a distinct rarity in adults, at least in advanced societies. Careful experimental study of human volunteers has established that the earliest discernible manifestations of scurvy, hyperkeratosis about hair follicles notably on calves and buttocks, appears 134 days after elimination of vitamin C from the diet.<sup>2</sup> About three weeks later one may observe perifollicular petechiae and poor wound healing. However, there is sometimes little correlation between these changes and the symptoms usually noted in clinical practice. Thus at the London Hospital, Cutforth<sup>3</sup> found only two out of 11 adult scorbutic patients with notable perifollicular changes. He was more impressed with frank bleeding as a presenting sign. Often this takes the form of hemorrhage into muscles, painless hematuria, seepage of blood into serous cavities or epistaxis.<sup>9</sup>

While most scorbutic patients have the disease in combination with other vitamin deficiencies or with "stress" states such as infection, Davidson<sup>4</sup> first reported the interesting relationship between scurvy and peptic ulcer especially when the patients had been following the Sippy regimen. Subsequent studies indicated significant ascorbic acid depletion in ulcer patients even before dietary therapy was begun.<sup>1,5,7,8,11</sup> Portnoy and Wilkenson, for example, in a series of 58 patients with ulcer noted serum ascorbic levels from 0.14 to 0.59 mg per 100 cc but no clinical indication of scurvy. It is thus well established that patients with peptic ulcer may be at the threshold of scurvy even before special restrictive diet is applied. Reasons for this remain obscure although gastric irritation and intestinal hypermotility have been shown to lower plasma ascorbic acid levels appreciably.<sup>6</sup>

According to Ralli and Sherry,<sup>9</sup> a diagnosis of scurvy is justified if the following criteria are met:



- History of ascorbic acid deficient diet or presence of some condition known to increase the body's demand for this vitamin.

- Physical findings characteristic of the scorbutic state.

- A low level of ascorbic acid in blood, urine or tissues.

A low plasma ascorbic acid level is not proof of scurvy, present or imminent, but most authorities consider a value of under 0.5 mg per 100 cc as at the scurvy level.<sup>9</sup> Certainly this may be a crucial laboratory determination in the investigation of a given patient with a perplexing bleeding problem.<sup>10</sup>

The case described appears to satisfy the criteria for a diagnosis of scurvy. It illustrates the need for proper dietary supervision in patients undergoing medical therapy for peptic ulcer, even if they live in an area where oranges abound.

#### SUMMARY

A patient with intractable nosebleed was found upon serum ascorbic acid determination to have a pronounced deficiency of this vitamin even though she lived in an area where citrus fruits abound. She had had dietary treatment for peptic ulcer and questioning elicited that she had not taken supplemental vitamins as prescribed.

St. John's Hospital, Santa Monica Blvd. and 22nd Sts., Santa Monica.

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## Incarcerated Hiatal Hernia with Gangrene of the Entire Stomach

J. NEIL MEDEFIND, M.D., and  
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A TWENTY YEAR OLD white man was admitted to the Merced County General Hospital on January 26, 1960, for observation on the medical service. He gave a history of having fairly sharp pain in the anterior chest after wrestling with his brother 24 hours before admission. The pain was constant and spread to the epigastric area during the night. The day of admission he had some retching and vomiting, and he was nauseated on admission. The thoracic pain was aggravated by deep breathing.

He gave a history of having had severe injuries in 1958 in an automobile collision—multiple fractures of left ribs, left pneumothorax and cranial injuries. He had been unconscious for 21 days. Burr holes had been drilled in the skull because of the head injury, and a tracheotomy was also performed. He recovered promptly from the injuries but thereafter had occasional episodes of pain in the left side of the chest associated with some shortness of breath.

Upon admission the patient appeared to be in moderate respiratory distress. The pulse rate was 92, respirations 24 per minute, the temperature 98.6° F. and blood pressure 170/90 mm of mercury.

Upon examination, bilateral trephine depressions were observed in each anterior parietal region of the scalp. Dullness to percussion was noted over the left lower lung field, and breath sounds over this same area were diminished to absent. No rales were heard.

The abdomen was soft and flat. There was mild to moderate tenderness in the epigastric region. No masses were palpable. The spleen and liver were not enlarged.

Leukocytes numbered 15,000 per cu mm of blood with a total of 97 per cent polymorphonuclear cells, 81 per cent segmented and 16 per cent non-segmented. Hemoglobin was 12.6 grams per 100 ml. The hematocrit was 39 per cent.

Urinalysis showed a 3 plus reaction for sugar, a faint trace of albumin and an occasional white blood cell. Blood sugar was 167 mg per 100 ml.

X-ray films of the chest showed the right lung to be clear. The left diaphragm was considerably elevated, with what seemed to be a high fluid level in the stomach immediately below it. The cardiac outline was normal. A roentgenogram later in the day showed the heart and mediastinal structures shifted to the right. There appeared to be some pleural fluid on the left.

Submitted March 25, 1963.

The patient was admitted to the medical service with a tentative diagnosis of pneumonitis of the left lower lung with atelectasis, and mild diabetes mellitus.

The patient's condition gradually became worse during the day and evening. He became apprehensive, was short of breath and complained of left thoracic pain. The pulse rate rose to 144 and the blood pressure dropped to 80/50 mm of mercury. Respirations became more labored.

A Levine tube was passed and a light pink liquid was obtained. Oxygen was administered. Upper gastrointestinal roentgen studies with barium were carried out at 1:30 a.m. The barium filled the esophagus and passed through a portion of the fundus of the stomach, then proceeded no farther, although the patient was rotated to the left and right. The stomach appeared to be in the left hemithorax. A tentative diagnosis of traumatic rupture of the left diaphragm and herniation of the abdominal viscera into the left pleural cavity was made.

The abdomen was opened with a left paramedian incision extending from above the umbilicus to the left subcostal area. Abnormalities noted were limited to the stomach which, proximal to the level of the pylorus, was herniated through the diaphragmatic hiatus into the left side of the chest. As it was impossible to reduce the stomach through the hiatus, the incision was extended through the seventh intercostal space and the diaphragm was incised. The stomach in the chest cavity was found to be completely black, gangrenous, and foul-smelling proximal to the pylorus. Except for approximately 2 cm of the prepyloric area, the stomach was completely resected.

Esophago-gastrostomy was then done, with anastomosis in two layers, using silk and chromic catgut.

A tube was placed intrapleurally and was attached to water-seal drainage. The wound was then closed in routine fashion. Nasogastric suction was provided.

There seemed to be no change in the patient's status immediately following the operation and he was still in critical condition when returned to the ward. He improved rapidly, however, in the next 24 hours.

The pathological report was as follows: All the coats of the stomach were completely gangrenous and the specimen had a decidedly offensive odor. Microscopic sections showed the stomach wall to be completely infarcted, hemorrhagic and covered by fibrinous exudate. No malignant changes were present. The diagnosis was infarcted, gangrenous stomach.

The postoperative course was relatively uneventful with the exception of tachycardia, which persisted for four days. The intrapleural catheter was removed on the second postoperative day and the nasogastric suction tube on the third. The patient had no difficulty with liquids by mouth on the third postoperative day and was eating solid food by the eighth day.

He was discharged on the twelfth day after operation. Thereafter he had a few mild symptoms suggestive of the "dumping syndrome," which subsided after he was advised to eat smaller and more frequent meals, and he began gaining weight satisfactorily. An upper gastrointestinal roentgen study five weeks after operation showed a well functioning anastomosis and no signs of retention in the remaining segment of stomach.

The patient did not return for further follow-up care, but some three years later a relative told one of the authors that the patient was working full time and was having no abdominal difficulty.

652 W. 20th Street, Merced 95340 (Medefind).





## EDITORIAL

### The 1963 Legislature

FINAL TALLIES of the 1963 session of the California Legislature show that the medical profession again scored high in accomplishments.

Of 62 bills in the Assembly either sponsored or followed closely by the C.M.A., 34 were adopted and signed by the Governor, 16 were defeated, 11 were referred to interim committees and one was adopted but vetoed.

On the Senate side, 32 measures were sponsored or followed closely and 22 of these were adopted and signed. Three were not adopted, five were referred for interim study and two were vetoed by the Governor.

These figures add up to a total of 94 bills, 56 of which have now become law, with another 16 in the hands of interim committees, 19 killed in the legislative process and three passed by the Legislature but killed by the Governor's veto power.

While these statistics might not indicate too high a batting average, it must be kept in mind that the totals indicate all the measures in which the Association took a stand, not just those actually sponsored or approved by the C.M.A. If we consider only the sponsored measures, the record for the Assembly side of the Legislature shows six bills passed and signed, one killed and one referred for interim study. On the Senate side, one bill was passed and signed, one was killed and two were sent to interim study.

Of the measures listed here, several are of far-reaching importance and deserve special mention. Among these is Assembly Bill 59, a C.M.A.-sponsored measure to amend the regulations for implementation of the Kerr-Mills program for providing hospital and medical care for the aged. This measure introduces the concept of a "dollar deductible" schedule for the aged receiving benefits under the program, rather than following the original "time deductible" schedule. Under this bill, eligibility for care under the Medical Aid to the Aged program

will now be established during the first 30 days of confinement or whenever the cost of care exceeds \$1,500.

The C.M.A. had proposed that a \$400 deductible be established but in the legislative process this figure went to \$1,500. In any event, a rigid 30-day period of confinement before eligibility has now been tempered somewhat.

A.B. 59 also provides for reimbursement to the county from the first day of hospitalization for those eligible under M.A.A. In addition it broadens other provisions affecting needy children, totally disabled persons and the needy blind programs.

Another sponsored measure, A.B. 333, adds licensed and registered clinical laboratory technologists to the bioanalysts and the registered nurses as those permitted to draw whole blood. This bill also requires that after next January 1 all blood banks operating in California must be licensed by the State Department of Public Health. Previously, blood banks could operate under either a federal or a state license.

Still another C.M.A. proposal, A.B. 1038, provides that medical studies conducted by medical staff committees of hospitals, except the original medical record, shall be confidential and not admissible as evidence.

Senate bills listed in the tally include S.B. 300, a bill to exempt from taxation personal property used exclusively for professional libraries maintained by non-profit professional associations. This measure, of particular interest to the large library maintained by the Los Angeles County Medical Association, was killed in the Legislature, where exemptions are difficult to obtain.

The Legislature passed, and the Governor signed, S.B. 1200, which eliminates the prohibition against serving oleomargarine, on request, in restaurants which do not display large signs reading "Oleomargarine Served Here." The law provides that colored margarine may be served, so long as it is shaped in triangular chips or labeled "margarine"

on the surface. This measure, sought as a health aid, allows patients on low-cholesterol diets to secure their allowed fat substitutes in public restaurants. Previously, restaurants had rebelled at serving margarine, on request, when they were forced to proclaim on a large sign that this product was served, for usually such a sign was interpreted by most customers as meaning that butter was *not* served.

The Senate sent to interim study two C.M.A.-sponsored bills to put into effect the requirement that medical fees for industrial cases and for welfare cases be paid in an amount commensurate with fees paid by the general public. Passage of these two measures would have eliminated the reduced fees now paid by state agencies or employers for these cases.

Among the legislative proposals killed in the Legislature, several are of great interest to the medical profession. One of these would have excluded a physician from civil liability when drawing specimens of blood, at the request of a peace officer, where a person under arrest has voluntarily assented to this procedure. As matters stand today, a doctor drawing a blood specimen for determination of alcoholic content, at the request of a peace officer, is liable for civil suit for mayhem, invasion of privacy or other cause.

Also killed were bills to require revocation or suspension of professional licenses upon a showing of willful racial discrimination. Another measure

failing in the Legislature would have required the compulsory inclusion of podiatrists' services under any health service plan. Another would have set up a five-man Health Care Plan Board, with members appointed by the Governor, to regulate all plans not under the jurisdiction of the insurance commissioner. Along similar lines, one bill killed would have given the insurance commissioner jurisdiction over all health care service plans. Some years ago the C.M.A. carried this matter to the State Supreme Court, where California Physicians' Service was declared not to be an insurance program and therefore not under this jurisdiction.

Bills which successfully passed the Legislature but met with the Governor's veto were one to require that all members of the Board of Osteopathic Examiners be licensed osteopaths and another to limit the use of hypnosis to qualified professional practitioners.

All in all, the medical profession had a most successful legislative session this year. Credit must go to the Legislative Committee—Doctors Dan O. Kilroy, Sacramento (Chairman), Samuel R. Sherman, San Francisco, and Stuart C. Knox, Los Angeles—and to Messrs. Ben Read, Eugene Salisbury and Paul Putnam, representatives of the Public Health League of California. Our thanks go to these men for their dedication to a most important duty and their effective representation in the highest councils of our state government.





# California MEDICAL ASSOCIATION

## NOTICES & REPORTS

### Council Meeting Minutes

*Tentative Draft: Minutes of the 493rd Meeting of the Council, San Francisco, Hilton Inn, July 13, 1963.*

The meeting was called to order by chairman Anderson in the Hilton Inn, San Francisco International Airport, on Saturday, July 13, 1963, at the hour of 10:00 a.m.

#### Roll Call:

Present were President Sherman, Speaker Quinn, Vice-Speaker Heron, Secretary Hosmer and Councilors MacLaggan, Wilson, Todd, Goel, O'Neill, Bullock, O'Connor, Ham, Dalton, Murray, Davis, Miller, Watts, Campbell, Hudson, Kaiser, Anderson, Dozier, Grunigen, Cosentino and Shaw.

Absent for cause, President-Elect Doyle, Editor Wilbur and Councilor Rogers.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Klutch, Clark, Bowman, Tobitt and Doctor Batchelder of staff; Messrs. Hassard and Huber, legal counsel; Messrs. Read, Salisbury and Putnam of the Public Health League; county executives Scheuber of Alameda-Contra Costa, Rideout of Butte-Glenn, Rosenthal of Forty First, Geisert of Kern, Baker and Field of Los Angeles, Bannister of Orange, Brayer of Riverside, Dochterman of Sacramento, Donmyer of San Bernardino, Nute of San Diego, Wood of San Mateo, Donovan and Pearce of Santa Clara, Brown of Sonoma; Doctor Dan Lieberman, state director of Mental Hygiene; Mrs. Eunice Evans and Doctor Lester McDonald of the State Department of Social Welfare; Doctor Harold Erickson of the State Department of Public Health; Doctor William Reinhardt, dean of U. C. Medical School; Mr. John Pompelli of the A.M.A.; Mr. Richard Layton of A.M.P.A.C.; Doctors T. Eric Reynolds and Paul Hoagland and Mr. Etchel Paolini of C.P.S.; Doctors Osman Hull, Dan O. Kilroy, Gerald W. Shaw, Omer W. Wheeler, Nicholas DeSanto and others.

#### 1. Minutes for Approval:

On motion duly made and seconded, minutes of the 492nd meeting of the Council, held June 1, 1963, were approved.

#### 2. Membership:

(a) A report of membership as of July 11, 1963, was presented and ordered filed.

(b) On motion duly made and seconded, 355 delinquent members, dues now paid, were voted reinstatement.

(c) On motion duly made and seconded in each instance, 19 applicants were elected to Associate Membership. These were: Harold N. Johnson, Edwin H. Lofquist, Richard F. White, Sol M. Wolfson, Alameda-Contra Costa; Monna Sheller, Humboldt County; Harvey C. Gonick, Stanley Joseph Gross, Robert Rottschaefer, Los Angeles County; William Bradley Read, Marin County; Edward J. Doyle, Orange County; Joseph L. Hansen, James Mitchell, Riverside County; Francis D. Oakes, Davis H. Pardoll, Edwin H. Shryock, Russell T. Smith, San Bernardino County; Elsa L. Gordon, John R. Maloney, Eugene F. Peake, Santa Clara County.

(d) On motion duly made and seconded in each instance, eight members were elected to Retired Membership. These were: Hyman M. Katz, Roger A. Peters, Mabel May Purtill, D. Duane Stonier,

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SAMUEL R. SHERMAN, M.D. . . . .	President
JAMES C. DOYLE, M.D. . . . .	President-Elect
WILLIAM F. QUINN, M.D. . . . .	Speaker
IVAN C. HERON, M.D. . . . .	Vice-Speaker
CARL E. ANDERSON, M.D. . . .	Chairman of the Council
BURT L. DAVIS, M.D. . . . .	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D. . . . .	Secretary
DWIGHT L. WILBUR, M.D. . . . .	Editor
HOWARD HASSARD . . . . .	Executive Director
JOHN HUNTON . . . . .	Executive Secretary

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Florence Whittell, Forty First; Harry J. Hoag, Edward W. McCormick, Santa Clara County; Werner Fletcher Hoyt, Siskiyou County.

(e) On motion duly made and seconded, reductions of dues were voted for nine members for reasons of illness or postgraduate study.

### 3. *Committee on Committees:*

Report was made that a committee member, acting under a misunderstanding, had declined a continuation of his term of appointment and tendered his resignation. On motion duly made and seconded, it was voted unanimously not to accept the resignation and so notify the member.

### 4. *California College of Medicine:*

The Council discussed the desirability of a Development Advisory Committee to the California College of Medicine. On motion duly made and seconded, it was voted to authorize the members of the Committee for Emergency Action to participate in the formation of such committee, and that the committee include Drs. Bostick, Wheeler and Pollock.

### 5. *Industrial Medical Fees:*

Mr. Hassard outlined a proposal made by representatives of the insurance industry for development of a new schedule of industrial medical fees based on the 1960 Relative Value Studies. He reported that the Commission on Medical Services was currently engaged in reviewing various items in the RVS and that time would not permit a new schedule of this type to be developed this year. On motion duly made and seconded, it was voted to take no action on the proposal at this time but to give the matter further study.

### 6. *Commission on Community Health Services:*

Doctor Harold Kay, chairman of the Commission on Community Health Services, reported that in response to Resolution number 10 of the 1962 House of Delegates, the commission is engaged in the first phase of the resolution, namely, aligning the interested professions. A meeting has been arranged for September 21, following which the second phase, involving the participation of lay representatives, will be activated in order to expand the use of fluoridation.

Doctor Kay also reported that the Committee on Medical Aspects of Sports Injuries has scheduled a meeting. He also presented a pamphlet on "Suggested Guides for Liaison with County Hospitals," copies of which will be distributed to Council members, component societies and members of boards of supervisors in the counties.

### 7. *State College Student Health Services:*

Discussion was held on proposals advanced by educational authorities and medical directors for improvements in student health services in state colleges. On motion duly made and seconded, it was voted to authorize the Committee for Emergency Action on request to meet with officials of the State College System for discussion of the problems presented, after which the subject may be referred to the appropriate committee.

### 8. *Report of the President:*

President Sherman reported on his recent appearances, including participation in a panel discussion on medical-press relations before a meeting of the California Newspaper Publishers Association.

Doctor Sherman also reported for the California Medical Education and Research Foundation, stating that a request for federal funds to permit research on migratory farm workers and their health care coverage had been withdrawn. He also stated that Doctor Edward B. Shaw had been selected as the representative of the Scientific Board to be a member of the Board of C.M.E.R.F. On motion duly made and seconded, Doctor Shaw was unanimously approved for this post.

### 9. *Council Meeting Dates:*

Discussion was held on future Council meeting dates and, on motion duly made and seconded, it was voted to arrange meetings on August 24, October 12, November 16-17, 1963, and January 4, February 9 and March 20, 1964. The annual conference of Component Society Officers will be held February 8, 1964, in Los Angeles.

### 10. *Medical School Representatives:*

Chairman Anderson introduced to the Council Doctor William O. Reinhardt, newly appointed as dean of the University of California Medical School. Doctor Reinhardt expressed his pleasure at being invited to Council meetings and assured the Council of his willingness to work with the Association.

### 11. *State Department of Public Health:*

Doctor Harold Erickson, chief deputy director of the State Department of Public Health, reported on some changes in program dictated by the funds approved by the Legislature in the current budget. He also reported that the State Board of Health would meet July 19 to consider recommendations of the Cancer Council to bar the use of various cancer treatment agents. These would include Laetrile, Lincoln, Koch, mucorhizin and other agents.

Discussion was held on a proposal to establish within the State Department of Public Health a Public Medical Care Unit. On motion duly made



and seconded, it was voted to advise Doctor Malcolm Merrill, director of the department, of the opposition of the Council to the creation of such a department.

#### 12. *State Department of Mental Hygiene:*

Doctor Dan Lieberman, State Director of Mental Hygiene, reported on budget changes for the department and possible effects on some programs. He also complimented the teams formed to make rapid inspections of five state hospitals and reported on the interest manifested in planned inspections of 11 additional hospitals and three day treatment centers. He stated that the department would be able to give financial support to the costs of the planned inspections.

#### 13. *State Department of Social Welfare:*

Mrs. Eunice Evans of the State Department of Social Welfare discussed some conditions facing the department under legislation adopted in the recent legislative session. She also reported that pilot studies in the outpatient treatment of welfare patients in University of California Hospital, San Francisco, had been financially successful and that other hospitals would be included in this program.

Mrs. Evans also reported that the costs of several categorical aid programs had decreased in May and that some restoration of services previously dropped may be possible, especially in the Aid to Needy Children program.

In response to a question, Mrs. Evans stated that the Medical Aid to the Aged program in Santa Barbara County, operating under a C.P.S. contract, had shown reduced costs in May after high costs in April while accumulated treatments were encountered, that the program was now operating within budgeted funds.

#### 14. *California Physicians' Service:*

Doctor Paul Hoagland, board chairman of C.P.S., reported that the first five months of the current year had shown operations in the black, that operating costs in this period had been held to 10.4 per cent of income and that membership remained at more than 1,000,000.

Doctor Hoagland also reported that C.P.S. had embraced a national Blue Shield proposal under the high level option but had declined participation in the low level option because professional fees in this program came below C.P.S.'s minimum standards. Resolution No. 22 of the 1963 House of Delegates, calling for recipient rather than vendor payments, was under study, he reported.

#### 15. *Medical Executives Conference:*

Joseph Donovan, chairman of the Medical Executives Conference, requested William Nute, chairman

of a conference committee, to present recommendations for the handling of complaints against non-members. These recommendations, approved by the conference, were summarized: (1) The conference believes it proper for the component societies to receive and act on complaints against non-member physicians, subject to legal advice; (2) The C.M.A. may be called upon by component societies to assume jurisdiction under request of component societies, and (3) if these two items are accepted by the Council, study should be made of means of identifying non-members of the societies. On motion duly made and seconded, it was voted to withhold action on the first two proposals pending a report of the Commission on Medical Services and to accept the third proposal, with the conference inaugurating the study.

#### 16. *Finance Committee:*

Doctor Burt L. Davis, chairman of the Finance Committee, presented a current financial report for information purposes. He also recommended, on behalf of the committee, that \$1,000 be added to the budget of the Committee on Traffic Safety, to allow representatives of the component societies to attend traffic safety conferences planned by the State and by the committee in Sacramento.

#### 17. *Delegates to American Medical Association:*

Doctor Davis reported on the participation of California's delegation to the June meeting of the American Medical Association. The delegation was instrumental, he stated, in securing passage of amendments to the A.M.A. Constitution and Bylaws to enlarge the membership of the Board of Trustees and in electing Doctor Dwight L. Wilbur to a three-year term on the Board under its new structure.

#### 18. *Committee on Legislation:*

Doctor Dan O. Kilroy, chairman of the Committee on Legislation, presented a report on the disposition of 96 of the principal measures of medical interest in the 1963 Legislative Session. On motion duly made and seconded, Doctor Kilroy and Messrs. Read, Salisbury and Putnam of the Public Health League were voted commendation for the effective work performed by them and by the Committee on Legislation.

#### 19. *Bureau on Communications:*

Doctor Warren L. Bostick, chairman of the Bureau on Communications, reported on several activities of the bureau, including (1) plans for a national television appearance of Dr. Ed Annis, A.M.A. president, in the spring of 1964 if it is desired by A.M.A. (which on motion duly made and seconded was approved by the Council); (2) release of information to the press and other media

on safeguards to be observed in viewing the partial eclipse of the sun on July 20, and (3) production under way on a program to promote the use of medically-oriented programs for handling welfare medical care programs in the counties.

#### 20. *Scientific Board:*

Doctor Edward B. Shaw, member of the Council for the Scientific Board, reported on plans under development for the 1964 Annual Session, including the appearance of six guest speakers from the U.S. and Australia. He also commented on plans under way to provide a federated type of meeting in which specialty societies in the state would combine with specialty sections of the Association in promotion of superior programs. He also urged that California authors of acceptable medical papers present their work for publication in CALIFORNIA MEDICINE rather than in other publications.

#### 21. *Staff Report:*

Mr. Hassard reported that the Medical Executives Conference, through its committee to develop a Keogh law program and its consultants, had reviewed the lists of insurance companies and banks to be invited to participate in the statewide program and had established target dates for implementation of the plan. Final regulations are still to be issued by the Treasury Department, he said, but the committee's plan is to be ready to produce and publicize its plan prior to the end of the calendar year so that members may enter it in behalf of the full calendar year.

#### 22. *Specialty Certification:*

Doctor Grunigen reported on the ad hoc committee on certification of specialists in the Forty First Medical Society and recommended that two members of that society be added to the committee. On motion duly made and seconded, Doctors Vincent Carroll and Joseph Cosentino were approved as appointees to this committee.

#### 23. *Immunization Procedures:*

The chairman read a letter from a member, recommending that the Association take steps to promulgate and operate mass immunization programs, at no or small cost, for the diseases which are susceptible to immunization. On motion duly made and seconded, it was voted to refer this proposal to the Committee on State Medical Services for study and report.

#### *Adjournment:*

There being no further business to come before it, the meeting was adjourned at 3:35 p.m.

CARL E. ANDERSON, M.D., *Chairman*  
MATTHEW N. HOSMER, M.D., *Secretary*

## *In Memoriam*

BULL, EDWARD CLINE, San Francisco. Died July 21, 1963, in San Francisco, aged 74. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1914. Licensed in California in 1914. Doctor Bull was a member of the San Francisco Medical Society.



CLEMMONS, HOWARD MCGINNIS, West Covina. Died July 6, 1963, in West Covina, aged 44, of a coronary. Graduate of the University of Nebraska College of Medicine, Omaha, 1943. Licensed in California in 1953. Doctor Clemmons was a member of the Los Angeles County Medical Association.



COOK, ERNEST DALE, Azusa. Died June 18, 1963, in Azusa, aged 71, of arteriosclerotic heart disease. Graduate of the State University of Iowa College of Medicine, Iowa City, 1917. Licensed in California in 1919. Doctor Cook was a member of the Los Angeles County Medical Association.



CRISPIN, EGERTON LAFAYETTE, Los Angeles. Died July 11, 1963, in Pasadena, aged 85, of myocardial infarction. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1906. Licensed in California in 1913. Doctor Crispin was a member of the Los Angeles County Medical Association, a life member of the California Medical Association and a member of the American Medical Association.



FITZPATRICK, WALTER FRANCIS JR., Sepulveda. Died July 2, 1963, in Northridge, aged 49. Graduate of Georgetown University School of Medicine, Washington, D.C., 1937. Licensed in California in 1954. Doctor Fitzpatrick was a member of the Los Angeles County Medical Association.



GILBERT, ROY O. (OLSON), Sherman Oaks. Died July 25, 1963, in Santa Monica, aged 69, of heart disease. Graduate of the University of Michigan Medical School, Ann Arbor, 1924. Licensed in California in 1925. Doctor Gilbert was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



GLIDDEN, ROLAND YOUNG, Los Angeles. Died July 21, 1963, in Los Angeles, aged 68, of acute coronary occlusion. Graduate of the College of Physicians and Surgeons, Los Angeles, 1922. Licensed in California in 1922. Doctor Glidden was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



GROW, WALTER LOWRIE, San Bernardino. Died August 1, 1963, in Los Angeles, aged 69. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1924. Licensed in California in 1925. Doctor Grow was a member of the San Bernardino County Medical Society.



HOUSTON, MARIETTA, San Francisco. Died July 9, 1963, in San Francisco, aged 53, of cerebral hemorrhage. Gradu-



ate of Indiana University School of Medicine, Bloomington-Indianapolis, 1939. Licensed in California in 1944. Doctor Houston was a member of the San Francisco Medical Society.



KEATING, ROBERT EMMET, Covina. Died July 2, 1963, in West Covina, aged 43, of bleeding duodenal ulcer. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1945. Licensed in California in 1947. Doctor Keating was a member of the Los Angeles County Medical Association.



LANG, OSCAR F., Grass Valley. Died July 3, 1963, aged 82. Graduate of Northwestern University Medical School, Chicago, Illinois, 1909. Licensed in California in 1932. Doctor Lang was a member of the Placer-Nevada County Medical Society.



LAWRENCE, BERTRAND G., San Diego. Died August 3, 1963, in San Diego, aged 65. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1928. Licensed in California in 1946. Doctor Lawrence was a member of the San Diego County Medical Society.



MARSHALL, AMANDA C., Los Angeles. Died June 20, 1963, in Los Angeles, aged 52, of rheumatic heart disease. Graduate of the College of Osteopathic Physicians and Surgeons, Los Angeles, 1935. Licensed in California in 1935. M.D. degree from California College of Medicine, 1962. Doctor Marshall was a retired member of the Forty First Medical Society and the California Medical Association, and an associate member of the American Medical Association.



MOORE, NEWELL LINTON, Santa Ana. Died July 12, 1963, aged 68. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1929. Licensed in California in 1929. Doctor Moore was a member of the Orange County Medical Association.



MORGAN, JAMES W., San Francisco. Died July 2, 1963, aged 70, of cancer. Graduate of the Medico-Chirurgical College of Philadelphia, Pennsylvania, 1914. Licensed in California in 1915. Doctor Morgan was a member of the San Francisco Medical Society.



PELUSE, SAMUEL, Los Angeles. Died July 8, 1963, in Los Angeles. Graduate of the University of Illinois College of

Medicine, Chicago, 1927. Licensed in California in 1940. Doctor Peluse was a member of the Los Angeles County Medical Association.



PERCY, GEORGE DOWLING, San Francisco. Died July 30, 1963, in San Francisco, aged 51. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1951. Licensed in California in 1952. Doctor Percy was a member of the San Francisco Medical Society.



REES, CLARENCE E., San Diego. Died July 31, 1963, in San Diego, aged 71. Graduate of the College of Physicians and Surgeons, Medical Department, University of Southern California, 1914. Licensed in California in 1914. Doctor Rees was a retired member of the San Diego County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



RIGHETTI, HOMER, Ross. Died August 5, 1963, in Ross, aged 79. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1918. Licensed in California in 1918. Doctor Righetti was a member of the San Francisco Medical Society.



SHAW, HENRY NEWTON, Los Angeles. Died August 1, 1963, in Los Angeles, aged 75, of arteriosclerosis, coronary occlusion. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1913. Licensed in California in 1920. Doctor Shaw was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



STEIN, JACK M., Beverly Hills. Died July 16, 1963, in Beverly Hills, aged 52. Graduate of the College of Osteopathic Physicians and Surgeons, Los Angeles, 1934. Licensed in California in 1934. M.D. degree from California College of Medicine, 1962. Doctor Stein was a retired member of the Forty First Medical Society and the California Medical Association, and an associate member of the American Medical Association.



TOWNE, RUSSEL E., Monterey Park. Died July 7, 1963, in Monterey Park, aged 43, of ruptured cerebral aneurysm. Graduate of St. Louis University School of Medicine, 1945. Licensed in California in 1948. Doctor Towne was a member of the Los Angeles County Medical Association.



## What's That Noise?

NOISE CONTROL SAFETY ORDERS as adopted by the Division of Industrial Safety, State of California, recently became effective.

With the fundamental purpose of conserving employees' hearing, these orders establish minimum standards regarding control and exposure to excessive industrial noise.

Where reasonably possible, harmful exposure is to be reduced or eliminated by engineering or operational control. In other situations, approved personal protective equipment is to be used. Such equipment, which is to be supplied and maintained by the employer, is to be worn when noise equals or exceeds the specified limits. The employer must also instruct the employee in the use of ear protectors and must designate where within the place of employment they are to be worn. It is the employee's responsibility to properly use and care for such equipment.

The minimum standards for noise are:

<i>Decibels</i>	<i>Frequency bands (cycles per second)</i>
110 .....	20-75
102 .....	75-150
97 .....	150-300
95 .....	300-10,000

These levels apply when an employee is exposed to such noise for five hours or more per normal workday. For each halving of exposure time, the noise level may be 3 decibels higher (for example, if exposure time is two and a half hours, above decibel figures may be increased by 3 decibels.)

Since physiological response to noise may vary, these standards may not prevent hearing loss due to noise in every individual, but it is believed they should keep exposure to noise within reasonably safe limits.

Physicians who may have contact with noise problems should be cognizant of these new standards and their application.

We feel the Division of Industrial Safety is to be commended for its scientific and rational approach in developing these safety orders, which will be of considerable assistance in the conservation of hearing of the employees in industries where noise may be a hazard.

COMMITTEE ON OCCUPATIONAL HEALTH  
CALIFORNIA MEDICAL ASSOCIATION



# CALIFORNIA MEDICAL ASSOCIATION

## *1964 annual scientific assembly*

**BILTMORE HOTEL, LOS ANGELES, MARCH 22-25, 1964**

### **ANNOUNCING: FIRST CALL FOR SCIENTIFIC PAPERS AND MEDICAL MOTION PICTURES**

#### **THIS IS YOUR MEETING . . . . PLAN TO PARTICIPATE**

Do YOU HAVE A PAPER you'd like to present to your colleagues? . . .  
Write to the appropriate Section Secretary . . . Don't delay . . . Do it  
today . . . Programs are being planned *now!*

✓ ✓ ✓

Do YOU HAVE A MEDICAL MOTION PICTURE? . . . Write now to the  
CMA Committee on Scientific Assemblies, 693 Sutter Street, San Fran-  
cisco 2, for *application forms* for Medical Motion Pictures. *Don't wait!*  
Completed application forms must be in this office soon so that time can  
be allotted.

NOTE: Limitation of space precludes the showing of Scientific Exhibits of this meeting.

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#### **SECRETARIES OF THE SCIENTIFIC SECTIONS**

ALLERGY . . . . . Leo R. Melcher, M.D. 150 Arch Street, Redwood City 94062	OBSTETRICS AND GYNECOLOGY . Rolph L. Hoffman, M.D. 2111 Fifth Avenue, San Diego 92101
ANESTHESIOLOGY . . . . . Gordon C. Langsdorf, M.D. 6580 Avenida Mirola, La Jolla	ORTHOPEDICS . . . . . G. Wilbur Westin, M.D. 2300 South Hope Street, Los Angeles 90007
DERMATOLOGY AND SYPHILOLOGY . . . . . Normon E. Levan, M.D. USC School of Medicine, Rm. 10620, LACGH, 2025 Zonal Avenue, Los Angeles 90033	PATHOLOGY AND BACTERIOLOGY . . . . . Melvin B. Block, M.D. St. Luke's Hospital, 1580 Valencia Street, San Francisco 94110
EAR, NOSE AND THROAT . . . . . Irwin Horris, M.D. 4759 Hollywood Boulevard, Los Angeles 90027	PEDIATRICS . . . . . Jock W. Bills, M.D. 14914 Sherman Way, Van Nuys 91405
EYE . . . . . Byron H. Demorest, M.D. 5301 F Street, Sacramento 95819	PHYSICAL MEDICINE . . . O. Leonord Huddleston, M.D. 1910 Ocean Front, Santa Monica 90405
GENERAL PRACTICE . . . . . Merlin A. Hendrickson, M.D. 238 North Riverside Avenue, Rialto	PREVENTIVE MEDICINE AND PUBLIC HEALTH . . . . . Morris L. Grover, M.D. 100 North Gorfild Avenue, Pasadena 91101
GENERAL SURGERY . . . . . Harry E. Peters, Jr., M.D. 400 29th Street, Oakland 94609	PSYCHIATRY AND NEUROLOGY . Allen J. Enelow, M.D. 910 Via de la Paz, Pacific Palisades 90272
INDUSTRIAL MEDICINE AND SURGERY . . . . . C. Frederick Burton, M.D. 478 30th Street, Oakland 94609	RADIOLOGY . . . . . John L. Gwinn, M.D. Children's Hospital, 4614 Sunset Boulevard, Los Angeles 90027
INTERNAL MEDICINE . . . . . James H. Thompson, M.D. 490 Post Street, San Francisco 94102	UROLOGY . . . . . Michael J. Feeney, M.D. 3415 Sixth Avenue, San Diego 92103

# PUBLIC HEALTH REPORT

**MALCOLM H. MERRILL, M.D., M.P.H.**  
*Director, State Department of Public Health*

A ONE-YEAR STUDY to determine the average exhaust emissions from private cars in the streets of Los Angeles has just been completed. Exhaust emissions of hydrocarbons, carbon monoxide and oxides of nitrogen from over 1,000 cars were measured.

Primary analysis of the data shows an average exhaust emission of 700 to 750 parts per million of hydrocarbons, 3.2 to 3.5 per cent of carbon monoxide, and about 1,000 ppm of oxides of nitrogen. The results also show that passenger cars with automatic transmissions generally have lower average hydrocarbon emissions than do cars with manual gear shifting, although emissions of oxides of nitrogen were higher from those with automatic transmissions.

Basic purpose of the study was to obtain information on the exhaust emissions from a large number of cars representative of the vehicles operating in Los Angeles, and to develop standardized procedures to test emissions.

The recently adjourned legislature passed more than 40 bills having public health implications.

A Senate bill provided for the extension of the regional hospital planning program for two years, until 1965, and increased from two to four the hospital planning regions, adding the San Diego and South San Joaquin Valley areas to the two existing areas, San Francisco Bay Area and Los Angeles Metropolitan Area.

Another bill provides for the registration of motor vehicles that require smog control devices and

the establishment of inspection stations for such devices. The stations are authorized, however, only in counties where air pollution control districts have been established.

Another bill provides that a handicapped child who is mentally retarded shall not be denied the services provided by the State or county for handicapped children because of mental retardation.

The number of cases of meningococcal meningitis reported weekly from health jurisdictions appears to increase slowly. However, no new cases have been reported from the outbreak at the San Diego Naval Center.

The number of cases reported for the first four months of 1963 is 140, as compared with 118 during the like period in 1962. A study of cases of meningococcal infections and deaths for California since 1928 shows distinct peaks occurring approximately every seven to ten years and corresponding to major outbreaks listed for the nation as a whole (1929, 1936, 1943). The last peak in California occurred in 1953, ten years ago, so a new upswing of the disease may be developing.

With the advent of specific chemotherapy, the case fatality rate for meningitis has decreased from approximately 50 per cent or more in the 1930's to a median of 19 per cent during the last 20 years. This figure may be somewhat high due to under-reporting of cases and more accurate reporting of deaths.







# WOMAN'S AUXILIARY

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## TO THE CALIFORNIA MEDICAL ASSOCIATION

### Community Service

IN THIS TIME of ill-conceived legislation that the medical profession must oppose because of its threat to good medical care, it is most important for those of us in medicine to present to the general public a true image of a physician and his family. What better way of accomplishing this than through Community Service.

For years your Medical Auxiliary has worked toward this end with decided success. We all know of the Auxiliary's work in Health Careers but some of the less publicized projects have been equally successful in counties where they have been adopted. For example, San Francisco has an outstanding program of "Meals on Wheels" which has been widely acclaimed by the press, radio and television and in an official proclamation by Mayor George Christopher.

San Francisco's program, the first in the West, was started in 1959 for the purpose of supplying nourishing food to the aged and handicapped of the city. The meals are prepared in the kitchen of the Medical Society building and delivered by Auxiliary members. The program has been gradually expanded to provide meals for 35 shut-ins three days a week. Many counties have followed suit with similar programs for the aged, such as the new "Homemaker Service" which provides "good neighbors" to help keep families together during medical crises.

GEMS—Good Emergency Mother Substitutes—is a training program for Junior High and High School baby sitters. It consists of five or six lessons on safety precautions, emergency care, bathing, feeding and behavior patterns of children. Films such as "Mouth to Mouth Resuscitation" and "The ABC of Baby Sitting" are shown and the lessons are taught by auxiliary members who often are RN's or have had other professional training. Thousands of boys and girls have graduated from GEMS and the Auxiliary has earned the gratitude of their parents as well as of those who use their services.

Youth Fitness—emphasized in our National Auxiliary—is a cooperative project with the American

Medical Association to promote youth examinations by members of county medical societies working through local school systems. The Auxiliary will aid in promotion, work and follow-through on these examinations. In some localities arrangements already exist. Where they do not, the Auxiliary can arrange for and promote such programs in the interest of youth as a pure Community Service.

Under Disaster Medical Care (no longer Civil Defense), there is a new program called Medical Self-Help which was initiated to teach American families how to survive a national emergency and how to meet their own health needs if deprived of a physician's services. This 16-hour course consists of 12 lessons. A training kit for teaching the course contains everything needed. A physician serves as instructor to other medical professionals, who in turn teach the general public. The training is administered by states as a cooperative effort of medical, health, educational and civil defense organizations. It is especially suited to physicians and their wives since many of the latter are trained medical personnel. Dr. Cecil H. Coggins of the California Disaster Office is in charge of this program for the State of California. Pilot programs have been initiated in three counties in California and have received the enthusiastic support of all physicians involved. Subject to State financial appropriations, he expects that each county will follow suit within the next year or so. This is a top priority project of the A.M.A. and our assistance is urgently needed.

In addition to the foregoing programs, our members have contributed thousands of hours to such community projects as blood banks, mental health programs, the Hope Ship Project, glaucoma clinics, hospital auxiliaries, KO Polio, cancer drives and many others too numerous to mention.

All this has been done with one thing in mind—to represent organized medicine as a truly humanitarian organization working for the public good. With your help, we plan to continue.

MRS. ROBERT J. WIESE  
*Chairman, Community Service*

# INFORMATION

## Public Provisions of Medical Benefits Regardless of Ability to Pay\*

*A Report of the Bureau of Research and Planning, California Medical Association*

THE DIVISION of Research and Statistics of the Social Security Administration, Department of HEW, has recently published a paper which purportedly contains information on the types of public programs under which "persons are entitled to some direct medical benefits or under which the government partially subsidizes the cost of medical care without reference to a means test or ability to pay."

The Bureau of Research and Planning has analyzed the contents of the report, and has arrived at the conclusion that the findings reached by the report are confusing and lack meaning. The report, moreover, lacks internal consistency, and contains a number of errors, both with regard to classifications used and data cited.

Since the report will undoubtedly be quoted widely, the Bureau believes that the reasons for its criticism of the research paper should be carefully noted.

The report estimates that, "in 1961, 55.8 million persons in the United States, or 30 per cent of the total population, were eligible for some direct medical benefits or partial government subsidies of the cost of medical care without a means test." Included in this total are military personnel, dependents of military personnel, and totally disabled veterans. Also included are persons covered under workmen's compensation and temporary disability insurance, federal employees and dependents under the Federal Employees Health Benefits Act, employees of State government and their dependents, Indians, and Merchant Seamen.

The Bureau's criticism is that, with the possible exception of Indians and Merchant Seamen, all other persons (55.3 million!!!) are eligible for medical care benefits as a consequence of the employer-employee relationships which exist at present, or which occurred in the past. The most glaring

Employing a definition so broad as to be confusing and to lack meaningful purpose, the Division of Research and Statistics of the Social Security Administration of the Department of HEW has compiled data showing that almost 56 million persons in the United States were entitled to medical benefits in 1961, regardless of ability to pay for them. The Division of Research and Statistics has also estimated that approximately 21 million of these persons received such medical benefits in 1961.

The C.M.A. Bureau of Research and Planning calls attention:

1. to the gross misuse and misapplication of the data,
2. to the fact that most of the persons were eligible for medical care benefits primarily due to the employer-employee relationships involved,
3. to the fact that there are discrepancies in categories of eligibles and recipients of care in the tables released by the Division of Research and Statistics,
4. to errors and discrepancies in the report, and
5. to the fact that the report errs by at least a margin of 55.3 million of the 55.8 million considered eligible for health care benefits.

error is that in which 44 million persons, who are covered by workmen's compensation are included in the over-all totals. This program, it should be noted, *is financed by employers*; it is a public program only insofar as it is the result of legislation. Enrollment of 7.8 million state and federal employees and their dependents in programs of health care which result from legislation involve contributions from employees and employers just as would other industry fringe benefit programs. The 4 million persons enrolled under programs of compulsory temporary disability insurance financed the costs of this program in several States and under the Railroad Retirement Act. Military personnel and their dependents, totalling 6.1 million, receive medical benefits by virtue of their service in the Armed Forces or as dependents of the military receiving fringe benefits. The only two groups for whom medical care is provided as a matter of public policy are Indians (400,000) and Merchant Seamen (100,000). The net of one-half million persons is quite different than the 55.8 million cited in the report.

It is therefore apparent that the report has based its figures on all programs which have resulted from legislation of one kind or another. In doing this, the report has literally forced its data to conform to a definition which leads to an implausible conclusion. It might be noted, parenthetically, that even the 6 million figure for Federal employees and their dependents is incorrect, since only 5.5 million of them elected to become eligible for benefits.

In another part of its report, the Division of Research and Statistics reports that 20.8 million

\*U. S. Department of HEW, Social Security Administration, Division of Research and Statistics. *Research and Statistics Note No. 4*, March 27, 1963.



persons received benefits during 1961 under various public programs. The Bureau's criticism of this section of the report is based upon the inclusion of categories of programs which were not previously listed as being eligible for medical care. Moreover, certain categories, such as maternal and child health, and crippled children's services are cited as not requiring evidence of ability to pay, whereas in fact many of them do. Another gross error is that 5.5 million Federal employees and their dependents are reported as having received medical services in

1961, when, in fact, less than 1.3 million of them did in a 16-month period between July, 1960, and October, 1961, according to the *Civil Service Journal* of the U. S. Civil Service Commission of Jan.-March, 1963.

The few foregoing facts should serve to caution the reader about accepting the report at face value. The publication of the report is a regrettable occurrence; one which can only serve to confuse the issue over "means" tests to which the report was apparently directed.

California Medical Association, 693 Sutter Street, San Francisco 2.

## Locum Tenens

**WILLIAM M. WHELAN, LL.B.**  
*Director of Special Services*  
*California Medical Association, San Francisco*

A PHYSICIAN who temporarily takes over the practice of another, is called a "locum tenens." The dictionary definition of a locum tenens is: "A substitute; one temporarily taking the place of another, as especially of a doctor or clergyman." The courts have held that after a government official resigns from an office, such as a commissionership, he is said to be the locum tenens of the office until a new appointment is made and qualified to fill the position.\*

Ordinarily, a substitute physician—a locum tenens—is an independent contractor and not an agent or employee of the original physician. Thus, the original physician is not liable for the negligence of the substitute† *unless he fails to exercise due care in selecting the substitute physician.*‡

A physician who temporarily leaves his practice, must make proper provision for his patients to be attended by a competent physician during his absence, and give his patients timely notice of his expected unavailability and the substitution.

The arrangement that needs to be worked out between the original physician and his locum tenens, has both practical and legal aspects. Business details, such as length of tenure, compensation, payment of current bills for rent, utilities, office help and the like, ought to be set forth in a written memorandum of agreement.

There are other matters that are peculiar to the practice of medicine which businessmen and those in other professions need not consider. The following guides are suggested to indicate some of the

matters that should be considered by both parties. (See check-list at end of article.)

The original physician should assure himself that the locum tenens has met all the basic legal requirements to practice medicine in the community. The county medical society ought to be notified, and perhaps the locum tenens should make application for membership if he is not already a member. Frequently, the county society has a new physicians' manual which could be made available and might be helpful. This is one practical way for the original physician to ensure that the locum tenens is a graduate of an accredited medical college, is licensed to practice in the state, has registered his license with the county clerk, has a narcotic permit, paid a city business and professions license tax, if one is required; and complied with existing requirements concerning the practice of medicine in the community.

The principles of professional conduct and medical ethics prevailing in the local community need to be known by the locum tenens. He should know the staff privileges of the original physician and arrangements should be made for him to have at least courtesy staff privileges at the hospitals which he would be generally expected to use. The locum tenens needs to know the consultants customarily used by the original physician, the laboratory facilities used, and the arrangements that have been made for laboratory pickups and deliveries.

The locum tenens will probably need to be familiar in most practices with such things as the following:

1. The services performed by the public health officer and the law requiring certain diseases and vital statistics to be reported.
2. The coroner's office.
3. Ambulance service available.
4. The various welfare programs, workmen's

\**Rogers v. Frohmiller* (Ariz.), 130 P. 2d 271. *State v. Simon* (Ore.), 26 P. 170.

†*Meyers v. Holborn*, 58 N.J.L. 193, 33 A. 389. *Moore v. Lee*, 109 Tex. 391, 211 S.W. 214.

‡*Nash v. Royster*, 189 N.C. 408, 127 S.E. 356. *Stohlman v. Davis*, 117 Neb. 178, 220 S.W. 247.

compensation laws, Medicare, VA Hometown Care, and similar public programs.

5. Blood banks, eye banks, and other specialized services available.

6. Emergency call systems and disaster care plans.

7. The nurses' register used for private duty nurses.

8. Prescription blanks and knowledge of the way in which necessary office supplies of drugs are obtained.

The original physician should have all the medical records of his regular patients current. A locum tenens can then be well-informed about a patient, especially if he is called on in emergency. Likewise, the locum tenens should make full and complete reports in the medical records of patients so that the original physician, when he returns, can be aware of any illness and treatment that occurred in his absence.

The original physician should satisfy himself that the locum tenens is well qualified to handle the type of practice he is assuming. Perhaps the two of them should work together for a short time. The locum tenens should know the office employees, the established routine at local hospitals, other physicians who frequently consult, and at least some of the patients. Professional liability insurance is a must. Both physicians should be aware of each other's coverage and be acquainted with the local insurance agent or representative of the company administering their respective policies.

The locum tenens will need to become familiar with the use of health insurance forms and the various insurance programs used by most of the patients. The fee schedule and method of billing customarily used by the original physician should be understood by the locum tenens. Established physicians who have used locum tenens advise that one should not expect the gross receipts from his practice to remain at the usual level during his absence. Regular patients tend to postpone such things as elective operations and periodic complete physical examinations. Some prospective new patients await the return of the established physician.

No attempt has been made here to detail any of

the specific requirements that need to be covered in very specialized practices. It is suggested that the inevitable *unusual* situation can best be handled through personal consultation. If practical, the locum tenens should know where to get in touch with the original physician and should be encouraged to freely consult by whatever means the situation demands when unexpected difficulties arise.

#### *Suggested Checklist for Original Physician and Locum Tenens*

- .....Length of tenure
- .....Compensation
- .....Arrange for payment of current bills and employees' salaries
- .....List regular services used, such as utilities, office help, etc.
- .....Notify county medical society
- .....Sponsor county medical society application for membership
- .....Review *New Physicians' Manual* together
- .....Evidence of graduation
- .....License to practice
- .....Filing of license with county clerk
- .....Narcotics permit
- .....Business or professional license tax when required
- .....Hospital staff privileges
- .....Introduce consultants usually used
- .....List laboratory and x-ray facilities
- .....Review blood and eye banks and other specialized services

#### REVIEW AND LIST:

- .....Public Health Officer, reportable disease and vital statistics regulations
- .....Coroner's Office
- .....Ambulance service
- .....Emergency call system and disaster care plans
- .....Nurses' registry ordinarily used for private duty nurses
- .....Nursing home facilities used
- .....Prescription blanks and system for ordering office drugs
- .....Various welfare programs, workmen's compensation laws; Medicare, VA Hometown Care, and similar programs
- .....Office and hospital medical records system
- .....Office employees and hospital routine
- .....Professional liability insurance and premises' liability and local agents
- .....Health insurance forms usually used
- .....Lawyer usually consulted
- .....Collection and billing routine and usual and customary fee schedule
- .....Telephone number and address of original physician during his absence





# NEWS & NOTES

## NATIONAL • STATE • COUNTY

### LOS ANGELES

The Los Angeles Pediatric Society announces its Twentieth Annual **Brennemann Memorial Lectures** to be held November 6 and 7, 1963 at the Ambassador Hotel in Los Angeles. This series of lectures is given in honor of the late Dr. Joseph Brennemann. Among speakers for the program are Dr. C. Everett Koop, professor of Pediatric Surgery, University of Pennsylvania School of Medicine, and Dr. Robert A. Ulstrom, professor of pediatrics, University of Minnesota.

\* \* \*

The Childrens Hospital of Los Angeles will hold its Second Clinical Conference in **Pediatric Anesthesiology** on January 25-26, 1964. The two-day program will be devoted to the practical aspects of the pre-anesthetic, anesthetic and post-anesthetic management of infants and children. In addition, one afternoon will be devoted to new concepts of pediatric anesthesiology.

Guest faculty will include Doctors M. Kathleen Belton, Oxnard, California; Alan Conn, Hospital for Sick Children, Toronto, Canada; and Robert Smith, Boston, Mass.

Further information can be obtained by writing to Dr. M. Digby Leigh, Childrens Hospital of Los Angeles, 4614 Sunset Boulevard, Los Angeles 27, California.

\* \* \*

Deadlines for applications for the 1964-65 fellowships and grants-in-aid in the fields of **cardiovascular research** have been announced by Dr. Eugene Temkin, chairman of the Research Committee of the Los Angeles County Heart Association.

October 15 is the deadline set for individuals interested in applying for three classifications of fellowships: research fellowships for the purpose of training, advanced research fellowships for those with two years of research experience, and established investigatorships for those with a minimum of three years' experience who are interested in a career in research.

Applications for grants-in-aid, which are available to non-profit institutions in direct support of a particular investigator, must be made before February 1, 1964.

Further information can be obtained from the Research Section of the Los Angeles Heart Association, 2405 W. Eighth St., Los Angeles 90057.

### SAN DIEGO

The California Academy of General Practice will hold its 1963 Scientific Assembly, October 20-23, at the new El Cortez Convention Center in San Diego.

Out-of-state guest speakers who will address the meeting are Dr. Walter J. Reich, professor of gynecology, Cook

County Graduate School, Chicago; Dr. Robert B. Lawson, chairman of pediatrics, Northwestern University, Chicago; Dr. Emerson Day, Medical Director of Strang Clinic, New York; Dr. Philip Thorek, professor of surgery, Cook County Graduate School; Dr. Petter A. Lindstrom, professor of surgery and chairman of the division of neurological surgery, University of Utah; and Dr. Irvine H. Page, director of research, Cleveland Clinic.

Further information can be obtained from California Academy of General Practice, 9 First Street, San Francisco 94105.

\* \* \*

**Dr. Dean R. Archer**, formerly chief of the aftercare and day treatment service at Napa State Hospital, has been appointed director of the San Diego **Day Treatment Center**, succeeding Dr. Thomas M. McMillan, the California Department of Mental Hygiene announced.

The San Diego faculty was the state's first community-based day treatment center at which mentally ill patients receive treatment during the day and return to their homes at night. Similar centers now are in operation in Los Angeles and San Francisco.

Mr. McMillan has resigned to become director of a new private psychiatric hospital.

### SANTA CLARA

Dr. Franz J. Ingelfinger, professor of medicine at Boston University Medical School and immediate past president of the American Gastroenterological Association, will deliver the second biennial **Albert M. Snell Memorial Lectures** on Monday and Tuesday, November 4 and 5 in Palo Alto. The lectures will be given at 8 p.m. in the Palo Alto Medical Clinic auditorium, 904 Bryant Street.

### GENERAL

The American College of Chest Physicians has announced the opening of competition for three cash awards which it gives annually for the best essays prepared by undergraduate medical students on any phase of the diagnosis or treatment of chest diseases.

The winners will be announced at the 30th Annual Meeting of the American College of Chest Physicians, to be held in San Francisco, June 18-22, 1964.

Additional information can be obtained by writing to Mr. Murray Kornfeld, Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago, Illinois 60611, U.S.A.

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The annual meeting of the American Association for **Automotive Medicine** will be held November 10-13 at Lake Arrowhead.

### ACCREDITED NURSING HOMES

A listing of 98 facilities accredited by the California Commission for the Accreditation of Nursing Homes and Related Facilities has been published by the Commission. A copy may be obtained by writing the commission at 2340 Clay Street, San Francisco 94115.

Occupational Health, AMA, 535 North Dearborn Street, Chicago, Illinois.

Sept. 26-29—**American Psychiatric Association.** Sixth Western Divisional Meeting. St. Francis Hotel, San Francisco. Contact: William Bellamy, M.D., 450 Sutter Street, San Francisco.

Sept. 27-28—**Seventh Annual Western Industrial Health Conference.** Jack Tar Hotel, San Francisco. Friday-Saturday. Contact: Chapman Burke, Code 732, Mare Island Naval Shipyard, Vallejo, California.

## EDUCATION NOTICES

### MEETINGS AND COURSES

#### COMMITTEE ON CONTINUING MEDICAL EDUCATION

THIS BULLETIN of the dates of continuing education programs and the meetings of various medical organizations in California is supplied by the Committee on Continuing Medical Education of the California Medical Association. In order that they may be listed here, please send communications relating to your future meetings or postgraduate courses to Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2.

### MEDICAL MEETINGS

#### SEPTEMBER MEETINGS

Sept. 12-Nov. 7—**San Joaquin Medical Society,** Stockton Postgraduate Study Club. Scottish-Rite Temple, Stockton. Thursdays. 8:00 p.m. \$10 for series. Contact: Boyd Thompson, executive secretary, P.O. Box 230, Stockton. HOward 6-9535.

Sept. 17-Oct. 22—**San Francisco Academy of General Practice**-sponsored Fort Miley Symposium, medical and surgical clinics 10th Annual Session. Fort Miley Veterans' Administration Hospital Auditorium. Tuesdays, 8:00-10:00 p.m. Members, \$15. Non-members, \$20. Residents and interns, no charge. Contact: Lester C. Krotcher, M.D., chairman, 595 Buckingham Way, San Francisco.

Sept. 21-22—**Vista Hill Psychiatric Foundation** Postgraduate Seminar in Psychiatry. In conjunction with Dept. of Psychiatry, USC School of Medicine. Mesa Vista Hospital, San Diego. Saturday-Sunday. 9:00 a.m.-4:00 p.m. Contact: A. J. Enelow, M.D., 1934 Hospital Place, Los Angeles 33—or: Thomas McMillan, M.D., 7850 Vista Hill Avenue, San Diego 23.

Sept. 25—**National Kidney Disease Foundation, Southern California Chapter,** Third Annual Professional Symposium on Kidney Disease. Ambassador Hotel, Los Angeles. Wednesday. 9:00 a.m.-5:00 p.m. \$15, including lunch. Contact: Mrs. Jean Gordon, administrative assistant, 5880 San Vicente Boulevard, Los Angeles 19.

Sept. 25-26—**American Medical Association Congress** on Occupational Health. Jack Tar Hotel, San Francisco. Contact: Henry F. Howe, M.D., secretary, Council on

#### OCTOBER MEETINGS

Oct. 2-4—**San Francisco Heart Association** 33rd Annual Postgraduate Symposium on Heart Disease. St. Francis Hotel, San Francisco. Wednesday-Friday. 9:00 a.m.-5:00 p.m. \$35. Interns, Residents no fee. Contact: Gene C. Taylor, Executive Director, 259 Geary Street, San Francisco 2.

Oct. 3-6—**Pacific Coast Fertility Society.** Flamingo Hotel, Las Vegas, Nevada. Contact: Julius Winer, M.D., secretary, 9915 Santa Monica Blvd., Beverly Hills.

Oct. 4-5—**San Diego County Heart Association** 13th Annual Professional Symposium on Heart Disease. Town and Country Hotel, Mission Valley Hotel Circle. Friday, 1:00 p.m.-5:00 p.m.; Saturday 9:00 a.m.-5:00 p.m. \$5. Contact: Mr. O. M. Avison, executive director, 2545 Fourth Avenue, San Diego 3.

Oct. 7-9—**American Electroencephalographic Society.** Jack Tar Hotel, San Francisco. Monday-Wednesday. Contact: Kenneth A. Kooi, M.D., secretary, University of Michigan Medical Center, Ann Arbor, Michigan.

Oct. 9-11—**California Division American Cancer Society.** Annual Meeting. El Dorado Motel, Sacramento. Wednesday-Friday. 9:00 a.m. daily. Contact: Robert Murphy, 875 O'Farrell Street, San Francisco.

Oct. 17—**San Diego Academy of Medicine** and the Tuberculosis and Health Association of San Diego County. Medical Symposium on Respiratory Diseases. El Cortez Hotel, San Diego. Thursday. 1:00 to 9:00 p.m. Contact: Harvey O. Randel, M.D., 3861 Front Street, San Diego.

Oct. 17-20—**Academy of Psychosomatic Medicine.** Sheraton-Palace Hotel, San Francisco. Contact: Klaus Berblinger, M.D., program chairman, Langley Porter Neuropsychiatric Institute, University of California School of Medicine, San Francisco 22.

Oct. 18—**Kern County General Hospital** Annual Postgraduate Conference. Bakersfield. Contact: George A. Paulsen, M.D., chairman, Kern County General Hospital, 1830 Flower Street, Bakersfield.

Oct. 18-19—**Kaiser Foundation Hospitals'** Seventh Annual Symposium. Fairmont Hotel, San Francisco. Friday, 7:30 p.m.-9:30 p.m., Saturday, 9:00 a.m.-5:00 p.m. Contact: Martin A. Shearn, M.D., Director of Medical Education, Kaiser Foundation Hospital, Oakland 11.

Oct. 20-23—**California Academy of General Practice** Annual Scientific Assembly. El Cortez Hotel, San Diego. Non-members \$10. Contact: Mr. William W. Rogers,



executive secretary, 9 First Street, Room 900, San Francisco 5.

Oct. 23-24—**American Heart Association Council on Arteriosclerosis.** Annual Meeting. Biltmore Hotel, Los Angeles. Non members \$15. Contact: Richard Hurley, M.D., 44 East 23rd Street, New York 10, N. Y.

Oct. 23-25—**California Hospital Association.** 1963 Annual Meeting. Yosemite National Park. Wednesday-Friday. Contact: California Hospital Association, 760 Market Street, San Francisco, EX 7-4730.

Oct. 24-26—**American Association for the Surgery of Trauma.** Mark Hopkins Hotel, San Francisco. Contact: William T. Fitts, Jr., M.D., secretary, 3400 Spruce Street, Philadelphia, Pennsylvania.

Oct. 25-27—**American Heart Association Annual Scientific Sessions.** Biltmore Hotel, Los Angeles. Members, medical students, house officers, research fellows, graduate students, U.S. Armed Forces—Free. Others, \$15. Contact: James McGraw, 44 E. 23rd Street, New York 10.

Oct. 27-Nov. 1—**American College of Surgeons Clinical Congress.** San Francisco. Contact: John Paul North, M.D., Director, American College of Surgeons, 40 East Erie, Chicago 11, Illinois.

Oct. 30-31—**California Conference of Local Health Officers.** Fresno Hacienda. Wednesday-Thursday. Contact: Acton W. Barnes, Assistant Chief, Administrative Division of Community Health Services, California State Dept. of Public Health, 2151 Berkeley Way, Berkeley 4.

Oct. 30-Nov. 2—**Nevada State Medical Association.** Joint scientific meeting with Rocky Mountain Medical Conference. The Dunes Hotel, Las Vegas. Wednesday-Saturday. \$20. Contact: Nelson B. Neff, executive secretary, 3660 Baker Lane, Reno, Nevada.

#### NOVEMBER MEETINGS

Nov. 1-3—**California Society of Internal Medicine** Annual Meeting. El Mirador Hotel, Palm Springs. Contact: Robert L. Paver, M.D., secretary-treasurer, 350 Post Street, San Francisco.

Nov. 1-3—**Southern California Psychiatric Society** Annual Fall Convention. Vacation Village Hotel, San Diego. 8:30 a.m. Contact: Ralph M. Obler, M.D., chairman arrangements committee, 427 North Camden Drive, Beverly Hills.

Nov. 5-13—**Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu, Hawaii. Contact: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii.

Nov. 6-7—**Los Angeles Pediatric Society,** 20th Annual Brennemann Memorial Lectures. Ambassador Hotel, Los Angeles. Wednesday-Thursday. Contact: William D. Misbach, secretary, 17258 Ventura Blvd., Encino.

Nov. 7-10—**San Diego Chapter of the California Academy of General Practice.** Eighth Scientific Symposium. Flamingo Hotel, Las Vegas. Thursday-Sunday. Contact: Edwin N. Reithmayer, M.D., 1115 West Chase, El Cajon.

Nov. 8-10—**Forty First Medical Society** First Annual Convention. Riviera Hotel, Palm Springs. Contact: Mr. Don E. Rosenthal, Administrative Director, 4775 Santa Monica Boulevard, Los Angeles 29, California.

Nov. 10-13—**American Association for Automotive Medicine,** Annual Meeting and Seventh Stapp Symposium. University of California Residential Conference Center, Lake Arrowhead, California. Open to all who are interested in automotive medicine and traffic safety. Sunday-Thursday. Contact: S. M. Houston, Ph.D., Engineering Extension, Room 6266, Engineering Building II, UCLA, Los Angeles 90024.

Nov. 11-12—**Western Society for Pediatric Research.** Eleventh Annual Meeting. Ambassador Hotel and Childrens Hospital, Los Angeles. Monday-Tuesday. Contact: Denman Hammond, M.D., secretary-treasurer, Childrens Hospital of Los Angeles, 4570 Sunset Boulevard, Los Angeles.

Nov. 13—**American College of Physicians Southern California Region,** Annual Basic Science Lecture. Statler Hilton Hotel, Los Angeles. 6:30 p.m. Contact: George C. Griffith, M.D., 1136 West 6th Street, Los Angeles 17.

Nov. 15-16—**San Diego County General Hospital.** Seventeenth Annual Postgraduate Assembly. Friday-Saturday. Contact: Joseph M. Thompson, M.D., 2290 Sixth Avenue, San Diego.

Nov. 15-16—**California Nurses Association Institute** on the Medico-Legal Aspects of Nursing Practice. Jack Tar Hotel, San Francisco. Friday-Saturday. Contact: Marion McDermott, R.N., CNA, 185 Post Street, San Francisco, YUkon 6-2220.

#### DECEMBER MEETINGS

Dec. 2-6—**American College of Chest Physicians,** Postgraduate Course on Diseases of the Chest. Ambassador Hotel, Los Angeles. Monday-Friday. 9:00 a.m.-5:00 p.m. Contact: Alfred Goldman, M.D., program chairman, 416 N. Bedford Drive, Beverly Hills.

Dec. 2-6—**American College of Physicians** Postgraduate Course. "Psychiatry for the Internist," Phil R. Manning, M.D., and Allen J. Enelow, M.D., co-directors. Los Angeles County General Hospital. Monday-Friday. Members \$60. Non-members \$100. Contact: Edward C. Rosenow, Jr., M.D., executive director, 4200 Pine Street, Philadelphia.

Dec. 3-6—**Scripps Clinic and Research Foundation.** "Advances in Cardiovascular Diseases." La Jolla. Tuesday-Friday. \$100. Contact: Harold Lowe, M.D., assistant program chairman, Scripps Clinic, La Jolla.

Dec. 5-7—**West Coast Allergy Society,** Annual Meeting. Las Vegas, Nevada. Thursday-Saturday. 9:30 a.m.-5:00 p.m. Non-members \$25.00. Contact: Jack M. Chesebro, executive secretary, 1818 S.E. Division, Portland 2, Oregon.

Dec. 6—**Southern California Public Health Association.** Annual Meeting. Huntington-Sheraton Hotel, Pasadena. Friday. 9:00 a.m.-4:30 p.m. Members \$1. Non-members \$2. Contact: Bernard Weintraub, secretary, Los Angeles City Health Dept., 111 East 1st Street, Los Angeles.

Dec. 13-15—**California Society of Pathologists** Annual Meeting. Riviera Hotel, Palm Springs. Friday-Sunday. Contact: W. K. Bullock, M.D., secretary, Los Angeles County Hospital, Dept. of Pathology, Los Angeles.

## POSTGRADUATE EDUCATION

### AUDIO-DIGEST FOUNDATION

**Audio-Digest Foundation** (a non-profit subsidiary of the California Medical Association) provides by subscription twice-a-month tape-recorded summaries of leading national meetings and authoritative surveys of current literature. Seven separate services in: General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, Anesthesiology, and Ophthalmology. A new Catalog of outstanding lectures and panel discussions in all areas of medical practice is also available. For information, write: Mr. Claron L. Oakley, Editor, 619 South Westlake Avenue, Los Angeles.

### UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Sept. 12-Dec. 5—**Teaching Clinics**. Thursday evenings. 24 hours.\*

Oct. 16-April 15, 1964—**Basic Science Course in Ophthalmology**. Wednesday evenings.\*†

Dec. 6-7—**Management of Gynecologic and Urological Problems**. Friday-Saturday.\*†

Feb. 19-29, 1964—**Clinical Postgraduate Program in Mexico City**.\*†

Mar. 7-28, 1964—**Clinical Postgraduate Program in Egypt**.\*†

April 11-May 2, 1964—**Clinical Postgraduate Program in Hong Kong**.\*†

Dates by Arrangement—**Clinical Traineeship**—Anatomy, Anesthesia, Dermatology, Pediatrics, Radioisotopes, Urology: 2 weeks, \$150; 4 weeks, \$250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, 478-9711, Ext. 2114.

### LOMA LINDA UNIVERSITY

Sept. 19-May 21—**Lecture Series** in association with the Riverside-San Bernardino Chapter of the American Academy of General Practice. El Rivino County Club, Riverside. Third Thursday each month. 2 hours per night. \$20 for non-members of AAGP.

Sept. 29.—**Seminar on Hypertension**. In association with San Diego Loma Linda University Alumni Chapter. Town and Country Motel, Mission Valley, San Diego. Sunday. 8 hours. \$15.

As Arranged—**Traineeships** in clinical and other departments are available by arrangement with department chairmen of the Postgraduate Division. 80 hours minimum.

**Anesthesia**, 6 months. 250-300 hours. \$350.

**Pulmonary Diseases**—can be arranged.

Continuously—**Illustrated Medical Lectures**: 30-minute tape recordings and accompanying 35-mm filmstrip, 50 to 80 full-color pictures for screen, hand or desk viewer. Available individually or by subscription. 12 or 36 titles per year, all titles produced in one year in any chosen specialty. Projectors and viewers included in subscription

\*Fee to be announced.

†Hours to be announced.

plans. Contact: Loma Linda University, Illustrated Medical Lectures, Los Angeles 33.

For course information contact: W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles, California 90033, ANgelus 9-7241, Ext. 214.

### PRESBYTERIAN MEDICAL CENTER

Nov. 9—**Arthritis**. Saturday. 8 hours. \$25.

Nov. 15-16—**Problem Cases in Clinical Ophthalmology**. 16 hours. \$40. Contact: Eye Bank, Presbyterian Medical Center.

Dec. 7—**Practical Therapy of Functional Illness**. Saturday. 8 hours. \$25.

Jan. 11—**Medical Emergencies**. Saturday. 8 hours. \$25.

Jan. 25—**Surgical Emergencies**. Saturday. 8 hours. \$25.

For information contact: Arthur Selzer, M.D., chairman, Education Committee, Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15. WEst 1-8000.

### UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Sept. 18-Dec. 4—**Practical Psychotherapy**. Langley Porter Neuropsychiatric Institute. Wednesday. 60 hours. \$25.

Sept. 20-21—**New Concepts of Pediatric Renal Disease**. Friday-Saturday. 12 hours. \$40.

Sept. 24-Nov. 5—**Clinical Consideration in Mental Retardation**. Sonoma State Hospital, Tuesdays. 12 hours. \$10.

Sept. 26-Oct. 31—**Neuropsychiatry in General Practice**. Napa State Hospital. Thursdays. 12 hours. \$10.

Sept. 28-29—**Current Problems in Surgery**. Franklin Hospital, San Francisco. Saturday-Sunday. 15 hours. \$25.

Sept. 28-29—**Psychiatric Management in General Medicine**. Peninsula Hospital, Burlingame. Saturday-Sunday. 12 hours. \$15.

Oct. 4-6—**Progress in Urology**. Friday-Sunday. 18 hours. \$60.

Oct. 9-12—**Retinal Detachment Symposium**. Wednesday-Saturday. 24 hours. \$75.

Oct. 12-Nov. 16—**Neuropsychiatry in Medical Practice**. Agnew State Hospital. Saturday. 12 hours. \$10.

Oct. 19—**Community Planning for Handicapped Children**. Children's Hospital, San Francisco. Saturday. 7 hours. \$15.

Oct. 19-Nov. 23—**Postgraduate Seminars in Clinical Sciences**. Mercy Hospital, Sacramento. Saturdays. 9 hours. No fee.

Oct. 24-26—**The Preclinical Basis of Gynecology**. Thursday-Saturday. 15 hours. \$60.

Nov. 1-2—**Graphic Methods in Cardiology**. Friday-Saturday. 12 hours. \$40.

Nov. 9-11—**Mental Health in the Classroom**. Saturday-Monday. 18 hours. \$15.

Dec. 5-7—**Symposium on Neuroectodermal Tumors and Melanomas of the Eye**. Thursday-Saturday. 15 hours. \$75.

Dec. 6-7—**Basic Electrocardiography**. Franklin Hospital, San Francisco. Friday-Saturday. 12 hours. \$40.

Dec. 7-8—**Psychiatric Perspectives in Medicine**. Stockton State Hospital. Saturday-Sunday. 12 hours. \$15.



Dec. 13-14—**Orthopedics: Problems of Soft Tissue Disease.** Friday-Saturday. 12 hours. \$40.

Jan. 11.—**Adverse Reactions in Therapy.** Children's Hospital, San Francisco. Saturday. 6 hours. \$15.

Jan. 24-26—**Annual Symposium: Man and Civilization.** Friday-Sunday. 18 hours. \$25.

Continuously—Courses presented by special arrangement: Principles and Clinical Uses of Radioisotopes (full time, one month).

For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MOntrose 4-3600, Ext. 179.

#### UNIVERSITY OF SOUTHERN CALIFORNIA

Sept. 17-Dec. 3—**Elements of Practical Cardiology.** Los Angeles County Hospital. Tuesdays. 7:30-9:30 p.m. \$75.

Sept. 23-Oct. 4—**Intensive Review of Internal Medicine.** Los Angeles County Hospital. Two weeks. 8:30 a.m.-12:30 p.m. \$75.

Sept. 25-Nov. 20—**Bedside Cardiology.** St. Vincent's Hospital. Wednesdays. 7:30-9:30 p.m. \$65.

Sept. 26-Dec. 19—**Bedside Clinics and Set Clinics in Internal Medicine.** Los Angeles County Hospital. Thursdays. 7:30-9:30 p.m. \$75.

Oct. 5—**Heparin, Its Structure, Pharmacology, and Clinical Usage.** Statler Hilton Hotel, Pacific Ballroom. Saturday. 9:00 a.m.-5:15 p.m. 7 hours. \$5.

Oct. 10-11—**Gastroenterology.** Mayfair Hotel, Gold Room, 1256 West 7th Street, Los Angeles. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$40. (Includes 2 coffee breaks and 2 luncheons.)

Oct. 25—**Scoliosis.** Orthopaedic Hospital. Friday. 8:30 a.m.-5:00 p.m. 8 hours. \$25.

Oct. 28—**Practical Office Dermatology.** Los Angeles County Hospital, Outpatient Clinic. Monday. 8:30 a.m.-5:00 p.m. \$25. (Includes 2 coffee breaks and 2 luncheons.)

Nov. 5-26—**Medical Funduscopy.** Los Angeles County Hospital, Ward 5000. Tuesdays. 7:30-9:30 p.m. \$37.50.

Nov. 7-8—**Clinical Conferences and Case Presentations.** Los Angeles County Hospital. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$25. (Includes 2 coffee breaks and 2 luncheons.)

Nov. 14-15—**Sexual Problems Encountered in Medical Practice.** Huntington Sheraton Hotel. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$40. (Includes 2 coffee breaks and 2 luncheons.)

Dec. 2-6—**Psychiatry for the Internist.** Los Angeles County Hospital. Monday-Friday.\*†

Continuously—**Basic Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$100. Physicians may register at any time.

Continuously—**Advanced Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$85. Physicians may register at any time.

For course information contact: Phil R. Manning, M.D., Assoc. Dean, Postgraduate Division, USC School of Medicine, 2025 Zonal Ave., Los Angeles 33, CApital 5-1511, Ext. 9.

#### TO HAVE YOUR MEETING OR PROGRAM LISTED IN CALIFORNIA MEDICINE FILL OUT AND MAIL THIS BLANK TO THE ADDRESS GIVEN

(COPY MUST BE RECEIVED NOT LATER THAN THE FIFTH OF THE MONTH PRECEDING ISSUE)

##### Continuing Medical Education, California Medical Association

693 Sutter Street, San Francisco, California, 94102

NAME OF ORGANIZATION\_\_\_\_\_

MEETING OR PROGRAM\_\_\_\_\_

\_\_\_\_\_

DATE\_\_\_\_\_ TIME\_\_\_\_\_

PLACE\_\_\_\_\_ FEE, IF ANY\_\_\_\_\_

CONTACT FOR INFORMATION:\_\_\_\_\_

(give name, title, address)

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## THE PHYSICIAN'S *Bookshelf*

**CORONARY HEART DISEASE**—The Seventh Hahnemann Symposium—Edited by William Likoff, M.D., Clinical Professor of Medicine and Head, Cardiovascular Section, Hahnemann Medical College and Hospital, Philadelphia, Pennsylvania, and John H. Moyer, M.D., Professor and Chairman, Department of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pennsylvania. With the assistance of Sheldon R. Bender, M.D., Albert N. Brest, M.D., Leonard S. Dreifus, M.D., Paul Novack, M.D., and Bernard L. Segal, M.D. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 483 pages, \$17.75.

This volume is one of a large number of proceedings of conferences to appear in book form in recent years. Such conferences fall into two groups: Those bringing together a relatively small number of investigators in the field for the purpose of exchanging ideas, and those of strictly postgraduate nature. In the first category are included conferences sponsored, among others, by Macy and Ciba foundations, by the New York Academy of Sciences and by some governmental agencies. The Hahnemann Symposia belong in the second category. In this book the rather narrow field of coronary heart disease is presented by 108 contributors. The book exemplifies all the faults inherent in the authorship of a great many contributors, especially when dealing with a subject which could probably be presented more clearly by but a few authors. Some widely known contributors included material already in print; others merely submitted a one-page abstract of their talk; there is the expected overlapping of many areas; controversial subjects are often presented with emphasis on only one side of the issue.

In spite of these criticisms this volume contains a great deal of valuable information on the subject—a fact automatically insured by the selection of a prominent faculty. Yet, proceedings of a postgraduate type conference are no match for the other type, where free discussion of the authors and the criticisms of each other often provide the most interesting and inspiring portion of the conference. This book will probably be of limited interest to the internist and cardiologist, considering the availability of many other, less verbose, coverages of the present status of coronary disease.

A. SELZER, M.D.

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**ATHEROSCLEROSIS—Mechanisms as a Guide to Prevention**—Campbell Moses, M.D., Associate Professor of Medicine and Director of the Addison H. Gibson Laboratory, University of Pittsburgh, School of Medicine, Pittsburgh, Pennsylvania. Lea & Febiger, 600 South Washington Square, Philadelphia 6, Pa., 1963. 239 pages, 54 illustrations, \$8.00.

This monograph contains 13 chapters which include discussions on epidemiology and the various aspects of pathogenesis of atherosclerosis. Each chapter is concisely written and contains a fair presentation of the usually controversial subjects, supported by abundant and well chosen bibliography. In dealing with a subject such as this one, where emotion plays as large a part as scientific endeavor in the interpretation of data, the author shows a praiseworthy level-headedness, common sense and sense of humor which makes

delightful reading. This book is recommended to anyone wishing to acquaint himself with the current status of research in atherosclerosis.

A. SELZER, M.D.

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**RADIOISOTOPE RENOGRAPHY—A Kidney Function Test Performed with Radioisotope-Labeled Agents**—Chester C. Winter, M.D., F.A.C.S., Professor of Surgery and Director, Division of Urology, Ohio State University College of Medicine, University and Children's Hospitals, Columbus, Ohio; Consultant in Urology, Veterans Administration Hospital, Dayton, Ohio, and Wright-Patterson Air Force Base Hospital, Fairborn, Ohio. The Williams & Wilkins Co., 428 East Preston Street, Baltimore 2, Md., 1963. 184 pages, \$9.00.

The author, in collaboration with others, has been the pioneer and the driving force behind the development of the technic, interpretation and usefulness of radioisotope renography. He has published extensively but more recently others have contributed their experiences with this modality to the literature as well. This monograph pulls all these views and experiences together for the first time and is the definitive work on the subject.

In Chapter 1, Dr. Winter deals with the comparison of radioisotope renography with other renal function tests. He feels that it at least is as accurate, if not more so, than the clinical tests now accepted as useful.

Chapter 3 deals, in a clear and concise manner, with the "normal" renogram and its interpretation.

The test equipment, the technic employed and the useful radioactive agents for renography are thoroughly discussed in Chapters 4, 5 and 6. Nothing is left to the imagination.

The next section of the book deals with the renographic changes typical of obstruction (e.g., ureteral stone, surgical ureteral injury), renal dysfunction, vesicoureteral reflux and acute renal failure. He stresses the value of the radioisotope renogram in the differential diagnosis of oliguria or anuria in a very convincing manner.

Clinically, the renogram has enjoyed its widest use as a screening test in the study of the hypertensive patient. The author feels that excretory urography, another essential step in presumptive diagnosis, is less helpful. Though he lists aortography as a "screening test," many workers in the field consider it the most definitive step in the diagnosis of renovascular hypertension. While Dr. Winter does not discuss the various methods used for "split function" renal tests he suggests their need if the screening tests point to a renal vascular lesion.

Dr. Winter then deals with the experimental application of renography and closes his discussion dwelling on the future possibilities of the technic.

This book is well illustrated and clearly written by the expert in the field. The author has put forth his thoughts with modesty and restraint. No enthusiastic bias is evident. It is a "must" for the nephrologist, urologist and those interested in renovascular hypertension. All that is known, or even surmised, about radioisotope renography lies between its covers.

RONALD R. SMITH, M.D.



**HANDBOOK OF PEDIATRICS—Fifth Edition**—Henry K. Silver, M.D., Professor of Pediatrics, University of Colorado School of Medicine, Denver, Colorado; C. Henry Kempe, M.D., Professor of Pediatrics and Head, Department of Pediatrics, University of Colorado School of Medicine, Denver, Colorado; and Henry B. Bruyn, M.D., Associate Professor of Pediatrics and Medicine, University of California School of Medicine, San Francisco, California; Director of Student Health, University of California, Berkeley, California. Lange Medical Publications, Los Altos, Calif., 1963. 602 pages, \$4.00.

This handbook is already too well known to require thorough review of its fifth edition. Suffice it to say it is evident that a successful effort is continually being made by the three authors to keep it up to date. The handbook can conveniently be carried in a medical bag or the pocket of a doctor's gown—albeit a rather large and sturdy pocket. Chiefly for this reason of compactness and convenience it has a place of usefulness for the medical student, general practitioner and pediatrician.

WILLIAM C. DEAMER, M.D.

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**TETANUS PROPHYLAXIS AND THERAPY**—Leo Eckman, D.M., Privatdocent of Surgery, University of Basel. Translated from the German with the Author's Additions to the German Edition. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 108 pages, \$5.95.

This disease, one of the most excruciating to endure, is still all too common. In spite of effective prophylaxis and advances in the surgical management of wounds, tetanus remains a scourge throughout the world, including our own state and nation. An estimated 50,000 persons die of this malady annually, of whom some 300 are Americans and 20 are Californians.

Nor has the case fatality rate of tetanus improved much in recent times, for it remains lethal in about 40 per cent of all cases, as pointed out by Dr. Eckmann. This author has drawn on his own extensive experience and the vast literature on the subject, reviewing practically all aspects of both the prophylaxis and therapy of the disease.

In his discussion of passive immunization, the author emphasizes the failures of serum prophylaxis as well as its successes. His conclusions are noteworthy: "Considering the experimental, clinical and statistical observations of the past years, it is difficult to understand the confidence with which serum injections are still given to injured persons as prophylaxis. Equally astonishing is that more than three decades after its discovery active immunization is only unwillingly or slowly accepted in some countries, while the serum immunization seems unshakable. Even today, if the physician neglects to give antitoxin following an injury he may be charged with malpractice. On the other hand, because of the serious reactions which can occur following the serum injection, he runs the risk of having to answer insurance claims."

While mention is made of gamma-globulin preparations of human origin containing a high content of tetanus antitoxin, it is somewhat disappointing to a Californian to find so little said of its advantages over animal serum preparations, since most of these researches were made in this state.

The author's consideration of active immunization against tetanus seems to be exhaustive. After a review of the numerous studies made concerning the efficacy and duration of immunity following the initial course of toxoid, it might appear empirical to conclude that, "There can be no question that active immunization can only protect those injured patients who receive a booster or in whom the last toxoid injection took place not more than six months

previously." However, such a dictum may be justified if restated, as by the author himself: "To complete the immunization following an injury, the booster must be promoted as a principle."

Especially recommended for physicians practicing in California is that section of the book dealing with "Tetanus Prophylaxis and 'Malpractice.'"

At the end of his brilliant treatise on the clinical aspects of tetanus, the author summarizes the limitations of therapy and returns to his original thesis—promoting active immunization with toxoid. As Dr. Eckmann points out, "If this sum (the cost of specific medication for one patient with the disease) were used for active immunization, it would be possible to protect about 800 persons from tetanus—safely, surely and enduringly!"

WILLIAM W. STILES, M.D.

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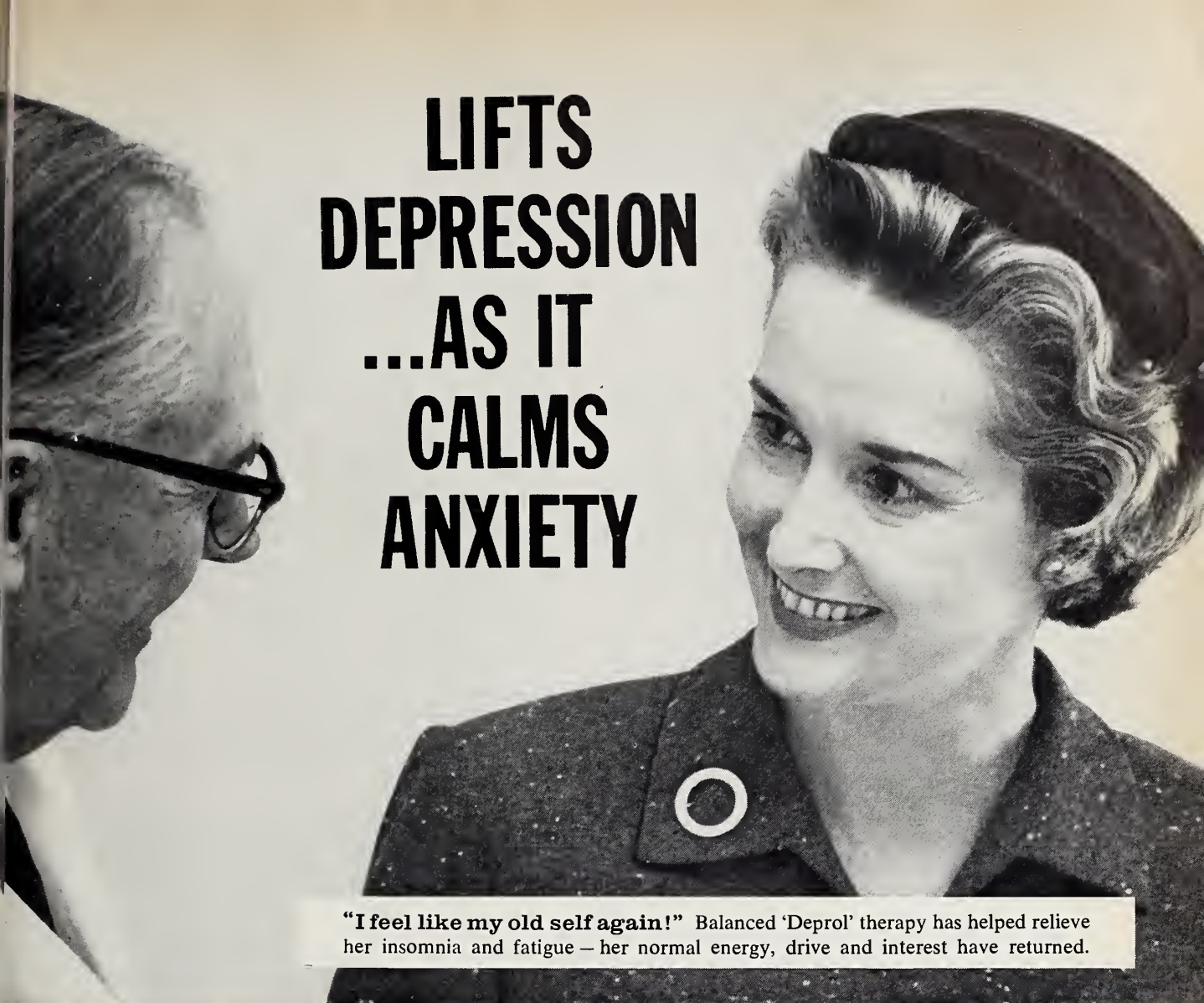
**ELECTROCARDIOGRAPHY—Second Edition**—Michael Bernreiter, M.D., F.A.C.P., Assistant Clinical Professor of Medicine, University of Kansas Medical School. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1963. 202 pages, \$7.50.

This is a second edition of a brief text of electrocardiography aimed at the medical student, general practitioner and internist. There are 198 pages but they contain 162 illustrations and approximately 35 pages of text: this book, therefore, is closer to an atlas than a textbook on electrocardiography. The text consists of a brief discussion of the various aspects of electrocardiography, hardly more than a definition. Some presentations are illustrated by didactic drawings, others by reproduction of tracings. This method appears to be more suitable in presenting arrhythmias than abnormalities of the ventricular complexes, where brevity can be more confusing than valuable. The section most out of place seems to be the one on electrocardiograms in congenital heart disease. One wonders of what possible interest to the student may be the fact that the author observed two instances of Wolff-Parkinson-White syndrome occurring in infants with ventricular septal defects (*both* tracings are reproduced). Several serious inaccuracies are noted: the caption for Figure 116 states "Pulmonary stenosis (cor pulmonale). Surely the inclusion of right ventricular hypertrophy pattern in the concept of "cor pulmonale" will only compound the already existing confusion in terminology in this area. The statements that atrial septal defect and pulmonary stenosis both show either right ventricular hypertrophy or right bundle branch block will be objected to by those who use the electrocardiogram successfully in differentiating between these two conditions. The statement that tall and peaked P waves are characteristic of Fallot's tetralogy is also incorrect.

Electrocardiography today is in an era of transition with more centers using direct vectorcardiography to supplement diagnostic information. Unipolar lead electrocardiography is being replaced by the vectorial concept. Consequently, today's beginner should at least be exposed to this concept and learn electrocardiography so that he can understand both areas. This has been done admirably by Grant and several of his followers. One can therefore question the emphasis on the various electrical positions of the heart, including clockwise and counterclockwise rotation, and right and left ventricular cavity pattern, as concepts popularized by the unipolar theory, now in part considered incorrect. In the reviewer's opinion this book cannot be considered worthy of recommendation as both the conceptual approach and presentation of the material are dealt with better in several other texts on the subject.

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## Course of Staph Infections Traced in Community

Ordinary housekeeping and laundry practices may perpetuate a high level of staphylococcal infections in a community, a Boston research team reports.

A study of the factors involved in the high rate of staph disease among 129 families in a housing project for married graduate students was reported in the July 20 *Journal of the American Medical Association* by Ruth B. Kundsins, Sc.D., Carl W. Walter, M.D., Johannes Ipsen, M.D., and Mary Day Brubaker.

Staphylococci are the cause of most of the superficial pus-forming skin infections in man and have become increasingly important because of their ability to develop resistance to antibacterial drugs.

The study implicated the hospital as the origin of the staphylococci with newborn infants introducing the bacteria into the family when they are brought home, the researchers said. It was also found that bacteria strains introduced into a family more often spread among members of that family than to friends or neighbors, they said.

Thirty-one per cent of the families with children two years old or younger had staph infections, compared with 10 per cent of families with no children or children over two years, the researchers said.

"Staphylococci are brought into the family through experience associated with having very

young children," they said. "The only obviously common experience is the hospitalization associated with childbirth."

The study revealed a significant difference between the infection rate of families using a community self-service laundry and those using other facilities, usually their own washing machine, the researchers said.

Seventeen per cent of those using the community laundry had staph infections, compared with eight per cent of those who did not, they said.

Other studies have indicated that the detergents used and temperatures attained in home laundering cannot be relied upon to control the transmission of bacteria on textiles and clothing, they said. A combination of soap and water at a high temperature and either sodium hypochlorite or laundry soap or both is required for complete destruction of bacteria on textiles, they said.

Temperatures attained in the wash water of the community laundry ranged from 120 to 149 degrees Fahrenheit, they said, adding:

"This temperature is inadequate for disinfection. Consequently bacteria must have been redistributed in the family laundry rather than destroyed."

Another aspect of the study revealed that the mother who spends more time in the home than the rest of her family is the most frequent carrier of staphylococci, the researchers said.

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#### **Adrenal Tissue Survives After Relocation**

Part of an adrenal gland remained alive and functional after being transplanted from a patient's abdomen to her thigh, Dr. James D. Hardy, University of Mississippi Medical Center, Jackson, Miss., reported.

Adrenal tissue was relocated in the thigh to preserve some of the gland's function following removal of both the left and right gland which are situated near the kidneys, Dr. Hardy said in the July 13 *Journal of the American Medical Association*.

The 48-year-old woman patient had Cushing's syndrome, a complex of symptoms including obesity and moon face which results from overgrowth of the adrenal glands, he said.

Previously, he said, the surgical management of this syndrome presented a dilemma. Total removal of the glands corrected the malady but resulted in permanent loss of the gland's hormones, he said. On the other hand, he said, leaving part of one gland intact entailed the risk of regeneration and recurrence of the original disease necessitating a more difficult repeat operation.

In the case described, Dr. Hardy said, both glands

were removed but adrenal tissue surrounding the central adrenal vein and part of the vein were preserved. When transplanted, he said, the adrenal vein was sewn to the saphenous vein deep in the thigh.

"This procedure offers a feasible method for the preservation of residual adrenal cortical activity after total intra-abdominal adrenalectomy," he said. "Should Cushing's disease recur, a portion of the autotransplant could be excised under local anesthesia."


There have been two previous operations, one performed in Sweden and one in New Zealand, in which adrenal tissue was transplanted to a thigh muscle under the same circumstances, he said.

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Insulin is still the essential hypoglycemic agent for the ketoacidosis-prone diabetic. However, in the ketoacidosis-resistant obese diabetic phenformin appears to be the hypoglycemic of choice to help avoid weight gain or reduce adiposity, a factor tending to make control more difficult and to increase the likelihood of complications.

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## REFERENCES AND REVIEWS

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Following the ingestion of ethanol there is a diuresis mediated by the fact that ethanol inhibits antidiuretic hormone. This was reflected as an elevated osmotic pressure in the serum. Chronic alcoholics displayed a more pronounced and sustained diuresis and revealed marked dehydration. The diuresis was inhibited by the administration of sodium chloride, which negated the inhibition of antidiuretic hormone by ethanol.

\* \* \*

BLOOD PLATELETS AND EXTRACORPOREAL CIRCULATION—E. W. Salzman. Transfusion, 3:274 (July-Aug.) 1963.

Platelet adhesiveness has been studied in patients undergoing cardiopulmonary bypass. Conventional doses of heparin do not alter platelet adhesiveness. With the onset of

perfusion, however, there is a precipitous fall in platelet count and in the adhesiveness of those platelets remaining. It appears that a circulating inhibitor of platelet-sticking is present during perfusion. In most cases, this defect gradually disappears after perfusion. In a few patients with excessive bleeding, persistent abnormalities in platelet adhesiveness have been demonstrated.

\* \* \*

DENTAL APPLIANCES OF VALUE IN BELL'S PALSY—A. H. Sather and H. L. Williams. Arch. Otolaryng., 78:210 (Aug.) 1963.

Three variations of dental appliances used to retract lips are presented. The advantages of such appliances are as follows: (1) They prevent, to a certain degree, overstretching of the facial musculature on the paralyzed side, thereby decreasing the rapidity and extent of fibrosis that may occur. (2) They provide considerable esthetic improvement for the patient during the time of paralysis. (3) The construction of the device is relatively simple. And (4) the appliance can be attached either to the natural dentition or to full or partial denture.

\* \* \*

DEXTROVERSION OF THE HEART WITH RHEUMATIC MITRAL STENOSIS—R. M. Gunnar, and H. P. Gunnar. Arch. Intern. Med., 112:248 (Aug.) 1963.

A case of dextroversion of the heart with acquired rheumatic mitral stenosis is presented. The age to which the patient has survived and the association of rheumatic heart disease make this case unusual. The patient was doing so well that surgery was not contemplated and catheterization or angiography seemed, therefore, an unwarranted risk. The diagnosis has been established by more usual means.

### PHYSICIAN PLACEMENT SERVICE

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## Mental Stress May Trigger Onset of Diabetes

Psychological stress may trigger the onset of diabetes in persons predisposed to the disease, three Los Angeles psychiatrists said today.

A study of 25 diabetics revealed that 20 had suffered a personal loss of some kind before the disease was discovered, Drs. Paul F. Slawson, William R. Flynn and Edward J. Kollar reported in the July 20 *Journal of the American Medical Association*.

Although speculation about a relationship between diabetes and emotional disturbance dates back to the 17th century, the researchers said their study was conducted to see how often newly diagnosed diabetics had suffered recent losses.

The patients were 20 men and 5 women ranging from 18 to 70 years of age who took a standard personality test and were interviewed within six months after symptoms appeared, the authors said.

Of the 25, 14 gave a history of a definite loss recognized as such by the patient and 6 gave evidence of a loss that could be reasonably inferred although not acknowledged by the patient, they said.

The losses consisted of such occurrences as death of, or separation from, a spouse, child, parent, or pet, or a social, occupational or financial setback, the researchers said.

"Although these losses occurred 1 to 48 months prior to the onset of diabetes, the effects of most losses extended into the life situation current at the time of psychiatric evaluation," they said.

In addition, they said, 14 patients were considered to be living in an emotionally deprived environment, 10 gave evidence suggestive of unresolved grief and 7 were considered depressed.

During the course of the study, the authors said they saw the disease which had been well controlled with a certain dosage of insulin go out of control when the patient suffered a personal loss.

"One of the most striking cases was a policeman with a four-year history of well-controlled diabetes," they said. "When he was told that his 15-year-old daughter had leukemia he went out of control. Further . . . studies showed that his daughter did not have leukemia. His response to this good news was prompt and dramatic with a return to his former insulin requirements."

In conclusion, the researchers said: "We do not suggest that psychological stress is a necessary etiological factor in diabetes, but, rather, that psychological stress may trigger the initial metabolic imbalance in predisposed individuals."

The psychiatrists are affiliated with the Neuropsychiatric Institute, University of California at Los Angeles Center for the Health Sciences.



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## Physicians Urged to Record Drugs For Study of Birth Defects

The *Journal of the American Medical Association* urged physicians to begin keeping records of all medications taken by expectant mothers, including non-prescription drugs, to help determine any influence on subsequent birth defects.

An editorial in the July 20 *Journal* said such record keeping is "a big task for members of the profession, especially if the records are to be kept so that complete information can be retrieved." However, it said, at present there is no easier way to ascertain the possible influences of drugs on congenital deformities.

Animal experiments are "too likely to give false answers either negatively or positively," the editorial said, and human studies after the birth of a deformed infant are "notoriously unreliable."

"The recent [medical] literature is replete with after-the-fact reports of congenital abnormalities in infants whose mothers had taken one or another drug during pregnancy," the editorial said.

"Such reports supply numerators without denominators in that they do not record the number of cases in which use of drugs is *not* attended by abnormalities; neither do they take into account the 'natural' incidence of malformations. Furthermore, they are otherwise dependent upon one of the most fallible of mental functions—memory."

Conscientious physicians who undertake this task will "do honor to the mission of their profession," the editorial said.

## Old-Style Air Purifiers May Be Harmful

Air purifying devices which emit ozone are no longer considered safe, according to Dr. Harry L. Huber, Chicago, an allergist and internist.

For many years it was thought that ozone was a safe and effective air-purifying gas, Dr. Huber wrote in the question and answer section of the July 27 *Journal of the American Medical Association*. However, he said:

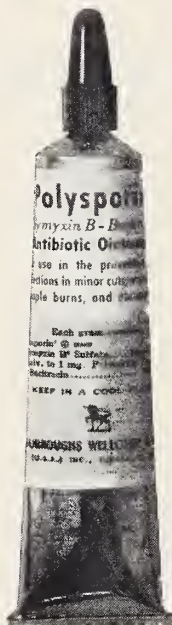
"Evidence has gradually accumulated to prove that ozone is a subtle gas which is very poisonous for experimental animals or human beings having continual exposure to it, even if it is present in very low concentrations for a relatively short period."

Ozone is created by a discharge of electricity in air or oxygen.

The sources of natural and man-made ozone are numerous in the environment, Dr. Huber said, and the gas cannot be completely avoided. The small amount that may be produced by an air purifying device may add enough to that already present to cause "discomfort and even harm," he said.

Manufacturers of modern air purifying devices which produce ozone now incorporate techniques to control the emission of ozone, Dr. Huber added.

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### Frequency Control Tested On Heart Pacemakers

A frequency control for implanted heart pacemakers, which can be used to accelerate the heartbeat under stress conditions, has been tested in two patients, a Philadelphia research group reported recently.

The external control is a further refinement of the internally implanted pacemaker which electrically stimulates the heartbeat at a constant rate. Pacemakers have been used successfully in patients with heart block.

The frequency control includes an induction coil and power supply, the researchers said. When the coil is placed on the surface of the skin overlying the implanted pacemaker, they said, heartbeat can be adjusted from 64 to about 126 beats a minute.

Data obtained from studies of two patients indicated that when they were at rest and at a minimum level of activity, the constant rate pacemaker at 60 to 64 beats per minute was satisfactory, they said. However, they said, a small increase in cardiac output, which can be created with the frequency control, may be advantageous as the level of activity increases to a point where the amount of oxygen consumed by the patient is several times the amount needed when he is at rest.

An increase in heart rate may also be indicated during other types of stress which impose a further

demand on the circulation, such as periods of fever or serious bleeding, they said.

The study was reported by Drs. George J. Haupt, Richard N. Myers, James W. Daly and Newton C. Birkhead, Lankenau Hospital.

### Homemade Tanning Mixture Termed Harmless Stain

A mixture of baby oil and tincture of iodine is an apparently harmless method for obtaining an artificial suntan, according to Dr. John M. Knox, a Houston dermatologist.

Although the homemade mixture may be used in the belief that it speeds suntanning, the iodine probably acts as a stain, Dr. Knox wrote in the question and answer section of the July 20 *Journal of the American Medical Association*.

He said he had observed no ill effects from use of the "home mixture" and there is probably little or no absorption of the iodine through the skin.

"The usual suntan is a response to injury from sunlight and is the body's way of protecting itself from additional injury," Dr. Knox said.

"From a medical standpoint it is safer to use certain types of stains or dyes . . . than to obtain a true suntan. It must be remembered, however, that artificial stains do not provide protection against sunburn upon subsequent exposure to the sun. Such protection is only provided by naturally produced pigmentation."

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## **Fever Blister Virus A Prenatal Threat**

Herpes simplex, the virus that causes fever blisters, may be responsible for more birth defects than is generally recognized, Drs. Joe E. Mitchell and Fred C. McCall, Bristol, Tenn, said recently.

The virus, which has caused death in infants presumably infected during passage through the birth canal, apparently can be transmitted to the developing embryo in the womb, the two pediatricians reported in the August *American Journal of Diseases of Children*, published by the American Medical Association.

Their conclusion was based on the birth of a baby with a clump of fever blisters on the right forearm. The baby's father had developed a fever blister on the lip about 10 days before the birth, the authors said.

"The fact that this infant was infected in utero by the virus of herpes simplex would seem to be clearly established, since the initial lesions were present at the time of birth," they said.

Although the baby's initial condition was good and he was released from the hospital after seven days, they said, his developmental progress was somewhat slow. At age two, they said, he had continued to have occasional crops of blisters, there was mild cerebral palsy affecting the right arm and leg, and the right eye turned inward.

The mother did not develop a fever blister or other symptoms, but she apparently had been infected by the father. Tests after delivery showed she had antibodies to protect against herpes simplex, and the relative mildness of the baby's initial response may have been due to the presence of antibodies at the time he was infected.

It appears that infection occurred in the infant about one week before delivery, the authors said, adding:

"One can only speculate as to the damage which might result in even earlier intra-uterine contact with the virus, particularly in those individuals without circulating antibodies."

Most adults, roughly 65 to 98 per cent, have neutralizing antibodies to the herpes simplex virus, they said.

Although fever blisters are the most common manifestation of herpes simplex, they said, the virus can cause a variety of symptoms ranging up to encephalitis in severity. The more severe effects are due to a primary infection whereas the fever blister is felt to be the result of an upset in an otherwise stable relationship between host and virus, they said.

"It may well be that the herpes simplex virus might account for more neonatal damage than is apparent in a review of the present literature," the authors said. "Since it is one of the more universal viruses, the chance for a contact with the herpes simplex virus by the fetus is proportionately greater."



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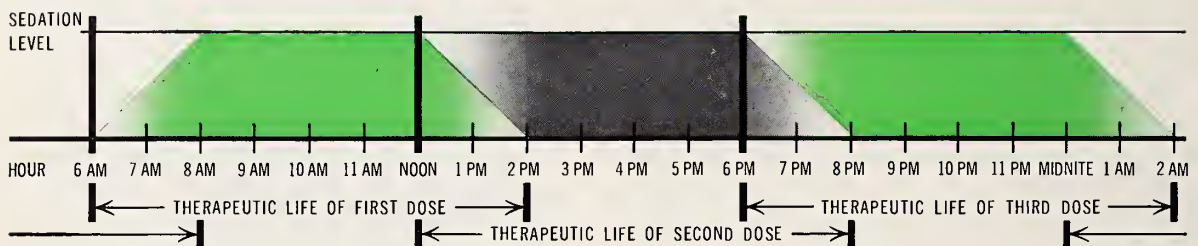
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## Cardiac Monitor-Pacemaker Cuts Death Rate

A cardiac monitor-pacemaker was credited with reducing the number of deaths that occur when the heart stops beating during surgery.

The instrument monitors the heart beat and, if it should stop, automatically sends an externally applied electric impulse to restart it, according to a report in the August 17 *Journal of the American Medical Association*.

Drs. Joseph P. Crehan and Morris N. Nicholson of the Lahey Clinic, Boston, said prompt diagnosis and immediately effective treatment are of paramount importance to recovery from heart standstill. During the past 15 years, they said, there had been no improvement in the recovery rate when observation of the patient was depended upon for diagnosis and open chest cardiac massage was used for treatment.

Of 13 persons treated for heart standstill in this way from 1941 to 1947, only 5 patients, or 38 per cent, recovered, the two anesthesiologists said. On the other hand, they said, of 8 persons whose hearts stopped beating while the monitor-pacemaker was in use, 7, or 88 per cent, were treated successfully.

These eight cases occurred during a six-month study in 1960-61 of 500 patients undergoing various types of surgery except open heart operations who were monitored with the instrument to deter-

mine the feasibility of using it for all surgical patients, the authors said.

Originally, they said, only those patients who had severe heart disease were monitored. However, they said, it was found that cardiac standstill occurred more often in patients without evidence of heart disease. Therefore, they said, monitoring was expanded to persons over 60 years of age, those undergoing radical surgical procedures and others.

"Our experience with this group of patients confirmed our impression that cardiac monitoring was feasible and worthwhile," they said.

The instrument consists of three electrodes which are attached across the chest of the patient and lead to the monitor which picks up and amplifies the electrical activity of the heart and converts this activity to a light flash and a sharp audible note. If the heart should stop, or slow below a predetermined rate, an alarm will immediately sound, and the pacemaker will instantly and automatically begin sending electric impulses to the heart to restore and maintain the beat. An oscilloscope is combined with the monitor-pacemaker as a means of confirming the status of the heartbeat.

Although a few false alarms occur and cannot be eliminated entirely, they said, experience permits recognition of them as such. The instrument needs little adjusting and its application and operation are easily learned, they said.

(Continued on Page 33)



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## Community Health Week Scheduled October 20-26

The first national observance of Community Health Week is scheduled October 20-26, the American Medical Association announced recently.

The A.M.A. House of Delegates, policy-making body of the association, adopted a resolution establishing the special observance on an annual basis last November. The objective is to focus public attention on the progress of medical science in all communities and the high quality of each community's health resources and facilities.

The manner of observance will be decided by each state and county medical society. Such activities as health fairs, science fairs, immunization campaigns and orientation of students about medical and health careers may be focal points of the week's program.

The House of Delegates suggested that the first Community Health Week be devoted to an examination of the broad spectrum of medical progress in the past few decades.

"With emphasis on local achievements and local responsibility, Community Health Week affords the medical society the opportunity to present the viewpoint that existing medical services are the fruits of the community's hard work in earlier years and that it is the responsibility of each citizen, working with his neighbors, to help plan now for tomorrow's

needs," Dr. Edward R. Annis, Miami, Fla., A.M.A. president, said. "Dramatizing this viewpoint, Community Health Week may serve as a potent catalyst for community action."

## American Medical Association Council Favors Labeling Drugs

The American Medical Association's Council on Drugs announced today that, as a general rule, it is in favor of labeling prescription drugs.

The council's recent adoption of a resolution on labeling drugs as to name and potency was reported in an editorial in the July 27 *Journal of the American Medical Association*.

"The ready availability of this information is obviously of great help when the patient has symptoms which may be untoward reactions, or which may result from too high a dosage," the editorial said.

"It is also invaluable when the patient changes doctors, moves to another locality, or contacts the doctor when his records are not at hand. The name of the drug and its strength on the label may save precious minutes and spell the difference between life and death in cases of attempted suicide, accidental overdosage, or accidental poisoning of children.

"Furthermore, naming the drug, or at least indicating its purpose on the label, helps to prevent mixups between two or more drugs that are being given concurrently, or between drugs being taken by different members of the family."

Despite the many advantages of labeling drugs, the editorial said, there must be some exceptions and the decision to label or not to label should be left to the patient's physician. Some drugs, such as opiates and barbiturates, should remain nameless at times and there also are patients who are better off if they do not know what they are taking, it said.

In most cases, however, the physician will want to tell the patient the name of drugs prescribed, it said, and there is a growing trend to indicate the name of the drug on the label of the box or bottle.

There was a time when doctors told their patients nothing and the patients seemed to want it that way, the editorial said, but it is now the patient's expectation that his illness will be explained to him and that he will be told about the proposed treatment and what to expect from it. Labeling prescriptions, the editorial said, is one more step toward bringing about better understanding between patient and physician.

The council's resolution reads, in full:

"The Council resolves that it favors labeling of prescriptions as a general practice, and, furthermore, it is recommended that prescription pads contain boxes for a 'yes' or 'no' on whether to label; if these boxes are not filled in by the physician, the prescription will be labeled."



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## Cardiac Monitor-Pacemaker Cuts Death Rate

(Continued from Page 25)

Despite the favorable results, the physician said, the monitor-pacemaker is not a panacea nor can it replace the judgment of the anesthesiologist. However, they said, the attention of the surgical team is often diverted momentarily and necessarily by other duties and the monitor-pacemaker has helped to fill this void capably.

### Some Paraplegia Recoveries Reported

Four patients who recovered from apparently hopeless paraplegia were described in the August 31 *Journal of the American Medical Association*.

The cases, reported by Drs. Paul C. Bucy and Roongtam Ladpli, Chicago, concerned patients with paralysis of the legs due to compression of the spinal cord by a tumor.

The two neurosurgeons said the cases illustrate that although in general certain circumstances pre-empt an unfavorable outlook, they do not absolutely preclude a more favorable result.

In one case, a 47-year-old woman had symptoms for 13 years and paraplegia for 18 months, they said, and yet she made "a most satisfactory recovery" following the removal of a tumor from the upper part of the spinal cord. When last seen, they said, she could walk "practically normally."

"This case emphasizes most forcefully that, although the long duration of paraplegia is admittedly a bad prognostic sign, it should not discourage either the patient or the surgeon to the degree that a remedial operation is withheld," they said.

In another case, paraplegia due to a malignant tumor had existed for nearly two months in a 42-year-old woman. After the tumor was removed the patient recovered and has remained well for 18 years, they said, demonstrating that some persons suffering from a malignant tumor of the spinal canal can, with proper treatment, recover and remain well for many years.

It is generally believed that a flaccid paralysis resulting from compression of the spinal cord has a poorer prognosis than a paralysis in which the muscles are stiff, the authors said. However, they reported a rare case in which a 29-year-old woman recovered after complete flaccid paraplegia of four weeks' duration. This patient's paralysis was believed to have been caused by a spreading cancer, they said, and she was treated nonsurgically. She has remained well for 13 years, they added.

The fourth case was a 27-year-old man with a benign tumor which had destroyed a vertebra which then collapsed. Prompt removal of the tumor and radiation therapy, they said, resulted in the recovery of this patient who is relatively well 33 years later.

The authors are affiliated with Northwestern University Medical School and Chicago Wesley Memorial Hospital.





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finish the lot is dispensed. When transferred to the finishing belt, the appropriate number of labels is placed in the labeling machine. Excess labels are put in the lockup box until needed. At night, the supervisor returns unused labels to the box lest some get lost or misplaced. ■ This is just one more precaution in an endless list of rules that contribute immeasurably to the quality of the finished product.

# California M E D I C I N E

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## Renograms

### Correlation With Renal Arteriography and Intravenous Pyelography

FRED H. MANDRICK, M.D., and MILO M. WEBBER, M.D., Los Angeles

SINCE TAPLIN and coworkers<sup>5</sup> first reported on their experience with the radioactive renogram, there have been many studies of this test reported. It is a rapid, accurate and easily accomplished test, and is used extensively at UCLA in the study of patients with overt or suspected renal disease. Our purpose is to determine the degree of correlation of the test with other radiographic renal examinations. All patients coming to the UCLA Medical Center during 1962 who had an intravenous pyelogram and aortogram in addition to the radioactive renogram were selected for this study. Our findings as well as case studies will be presented.

In most of the published reports on the renogram, the qualitative method of analysis was used. Stewart and Haynie published an excellent report on a quantitative method of analysis and this is the method used in the present study.<sup>4</sup> The maximum normal peak time (T max) and half time (T 1/2) of the downslope of the renogram curve were determined in a study of normal subjects done at UCLA by Brown and coworkers.<sup>1</sup> By their standards, the normal value for the T max was up to but not including four minutes. The normal value of the T 1/2 of the downslope was up to but not including seven minutes. In this study any prolongation of either the

• A study was carried out to determine how well the information supplied by a radioactive renogram correlates with that obtained by renal arteriography and intravenous pyelography. In 1962 35 patients at the UCLA Medical Center had all three studies. This represents a total of 70 kidneys (one kidney surgically absent). We found the radioactive renogram to be a very reliable and valuable aid in the diagnosis of kidney disease. When compared with the results of the intravenous pyelogram and aortogram, the renogram had false negative result in 11 per cent of cases, and a 14 per cent false positive result.

T max or T 1/2 of the downslope beyond these values was considered to be abnormal.

During 1962, 35 patients had the triad of renal pyelography, arteriography and radioactive renography. This does not include any cases in which one or more of the studies was done elsewhere than at UCLA. In only one case was a kidney surgically absent, and the study was based on the total number of kidney sites—that is, 70 (Table 1). Three interesting cases will be presented in detail followed by a discussion of the correlation of the renogram with the other studies.

#### METHODS

At present the test substance of choice is I-131 Hippuran.<sup>2,3,6</sup> Hippuran is rapidly excreted by the renal tubules in the manner of para-amino hippurate (PAH), and is not picked up by the liver as is

This work was partially supported by United Public Health Service Grants No. H 6354 and H 7011.

Presented before the Section on Radiology at the 92nd Annual Session of the California Medical Association, Los Angeles, March 24-27, 1963.



TABLE 1.—Comparison of Information Obtained by Intravenous Pyelogram, by Aortogram and by Renogram in 35 Cases

	Intravenous Pyelogram		Aortogram		Renogram	
	Right	Left	Right	Left	Right	Left
1.	0	0	0	Constriction proximal most portion artery	+†	0*
2.	0	Small kidney, congenital	0	0	+†	+
3.	Small kidney, delayed excretion	0	Constriction artery	Constriction but less than on right	+	+
4.	0	0	Marked narrowing accessory renal artery	0	+	+†
5.	Delayed excretion	0	Fibromuscular hyperplasia	0	+	0
6.	0	Delayed excretion	Minimal narrowing of origin of artery	Almost complete occlusion 2°. Atherosclerosis	+	+
7.	0	0	Fibromuscular hyperplasia	0	0*	0
8.	Ureteral stricture with hydronephrosis	0	Small artery	0	+	0
9.	0	Surgically absent	Fibromuscular hyperplasia	Surgically absent	+	+
10.	Poor filling	Poor filling	0	0	+	0*
11.	0	Blunting superior calyx	Narrow artery	Narrow artery	+	+
			Aortic aneurysm			
12.	Delayed excretion	0	Marked narrowing artery	Minimal irregularity mid portion artery	+	+
13.	Congenital hypoplasia	0	Congenital hypoplasia	0	+	+†
14.	0	0	0	0	0	0
15.	Poor filling and visualization	0	0	Minimal narrowing mid portion artery	+	+
16.	Delayed excretion	0	Marked arterio-sclerotic narrowing	0	+	+†
17.	Poor concentration	0	0	Minimal narrowing at orifice	0*	0*
18.	Calculus renal pelvis	0	0	0	+	0
19.	Poor filling and visualization	0	Small artery	0	+	+†
20.	Calculus	Calculus, contracted kidney, delayed excretion	0	0	+	+
21.	Delayed excretion	Delayed excretion	0	Narrowing of artery	0*	+
22.	0	Non visualization	0	Non visualization	+†	+
23.	Delayed excretion	0	Fibromuscular hyperplasia	Fibromuscular hyperplasia	+	+
24.	Caliectasis	Caliectasis	0	0	+	+
25.	0	0	0	0	0	0
26.	0	0	0	0	0	0
27.	0	0	Two arteries, both with fibromuscular hyperplasia	Narrowing of single artery near origin	0*	+
28.	0	0	Constricted artery	0	+	+†
29.	Ptosis, marked	0	Fibromuscular hyperplasia and ptosis	0	+	0
30.	Delayed excretion	Delayed excretion	0	0	+	+
31.	Delayed excretion	Delayed excretion	0	0	+	+
32.	0	Poor calyceal filling	0	0	+†	+
33.	Ptosis, marked	Non functioning small kidney	0	Complete obstruction of artery at orifice	+	+
34.	0	Calculus upper pole	0	0	+†	+
35.	0	0	Stenosis with 34 mm gradient	Stenosis with 8 mm gradient	0*	+

\*Indicates false negative.

†Indicates false positive.

0=Negative.

+=Positive.

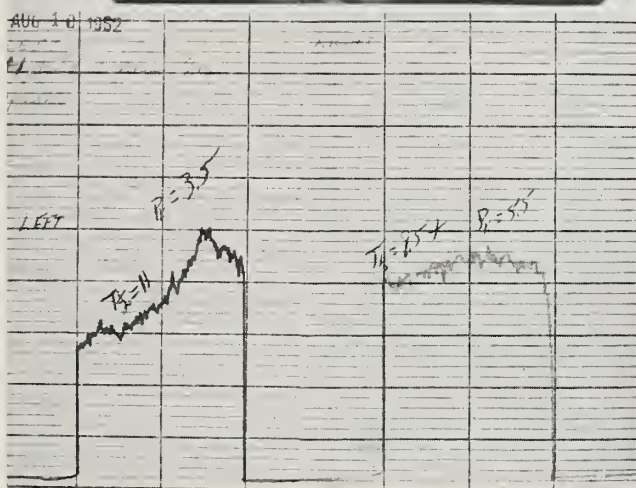
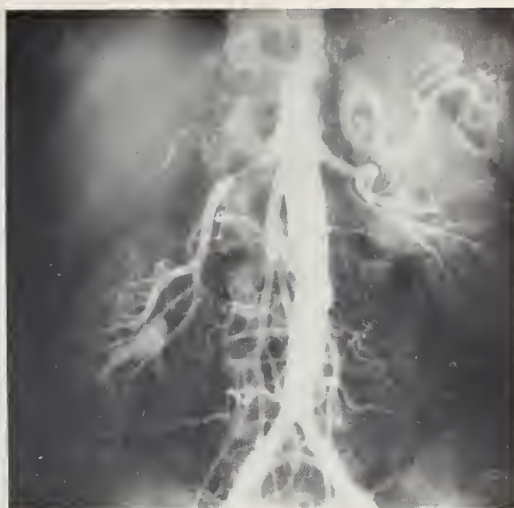


Figure 1 (Case 1).—A 2-minute intravenous pyelogram shows delayed appearance of contrast media on the right. The right kidney is 2 cm smaller than the left.

A supine aortogram shows pronounced narrowing of the right renal artery for a distance of 1.5 cm. The left renal artery appears normal.

The renogram shows a flattened tubular phase, prolonged  $T_{max}$  and  $T_{1/2}$  on the right.  $T_{max}$  on the left is normal, but  $T_{1/2}$  is prolonged. The time between the vertical lines on the tracing paper is  $7\frac{1}{2}$  minutes.

the contrast medium Diodrast.<sup>®</sup> The amount of intravenously administered I-131 Hippuran varied between 9 and 15 microcuries depending on the weight of the patient. All cases were done in the hydrated state with the patient in the sitting position. The probes were placed over the kidneys by means of the upright pyelogram film, and after injection of the I-131, finer adjustment of probe localization was done. Although some investigators have used a small test dose and audiometers in placing the probes, our method was satisfactory.

The equipment used for detection of the gamma rays consists of two thallium-activated sodium iodide crystals  $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{4}$  inches, retracted 6 centimeters in a lead collimator, the collimator having an internal diameter of  $2\frac{1}{2}$  inches and an external diameter of 5 inches. The crystal-photomultiplier probes relay the input via ratemeters to rectilinear stripchart recorders. The equipment is calibrated daily with a standard I-131 source.

#### REPORTS OF CASES

CASE 1. A 54-year-old white housewife had a history of hypertension for ten years and she had been treated with various drugs without significant success. Her past history was otherwise negative except for a single bout of right flank pain in 1942 which had been attributed to appendicitis and had cleared spontaneously. Her only complaint was of chronic fatigue and nervousness under stress.

On physical examination the patient was noted to be somewhat thin and nervous. The blood pressure lying was 240/120 mm of mercury. Positive physical findings consisted of Grade 1 arteriolar narrowing of the vessels of the fundus, and a bruit in the right epigastric region. The heart was not significantly enlarged to percussion, and no murmur was audible.

Results of urinalysis, of electrolyte determination and of blood cell counts were within normal limits. Serum creatinine was 0.77 mg per 100 ml. No abnormalities were seen in an x-ray film of the chest. The electrocardiogram showed LVH and ST-T wave



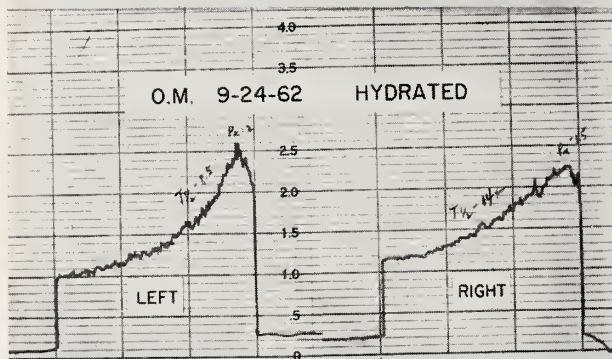
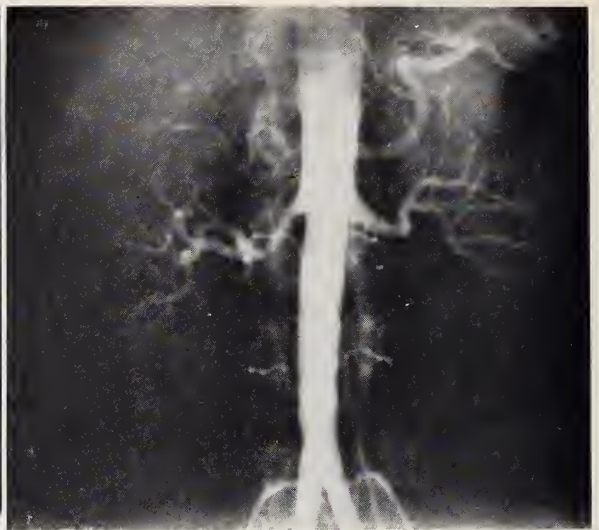


Figure 2 (Case 2).—Two-minute intravenous pyelogram reveals no contrast media on the right. The right kidney is 2.2 cm smaller than the left, which appears normal.

A supine aortogram shows a constriction of the mid portion of the right renal artery with post stenotic dilatation. There is also a constriction of the left renal artery that is hidden by the curve of the artery, but which was visible on the upright study.

Renogram shows low amplitude tubular phase with prolonged  $T_{1/2}$  on the right.  $T_{max}$  on the left is normal, but  $T_{1/2}$  is slightly prolonged. The vertical column of numbers supplies a gauge for determining counts per minute.

changes secondary to LVH and/or myocardial ischemia. Split kidney function studies revealed a scanty urine flow from the right kidney, and normal flow from the left.

An intravenous pyelogram showed the right kidney to be 2 cm smaller in vertical height than the left with delayed appearance of the contrast media on the right. There was bilateral ptosis of the kidneys with the patient in the upright position. An aortogram showed decided narrowing of the proximal right renal artery, apparently arteriosclerotic, for a distance of 1.5 centimeters. This was later confirmed at operation. The narrowing was accentuated in the upright position. The renogram showed a flattened tubular phase and prolonged peak time with pronounced delay in emptying on the right. On the left the tubular phase and peak time were normal, but the half time of the downslope was slightly prolonged.

CASE 2. The patient was a 42-year-old white housewife with a history of hypertension of three years

duration. There was no history of renal infections or calculi. The patient complained of frequent headaches, easy fatigability and nocturia. The history was otherwise unremarkable.

On physical examination the patient had a very asthenic build and was noted to be quite apprehensive. Her blood pressure lying was 200/120 mm of mercury. Other positive physical findings were Grade 1 retinopathic changes with focal irregular arteriolar narrowing. The heart was not enlarged to percussion. A bruit was heard in the mid and right epigastric area.

No abnormalities were noted on urinalysis. Blood cell counts were within normal limits. Electrolytes were also normal except for a slightly low potassium level, 3.46 mEq per liter. Creatinine was 0.9 mg per 100 ml.

An electrocardiogram and an x-ray film of the chest were within normal limits. Split function kidney studies revealed normal flow from the left kidney and scanty flow from the right. An intra-

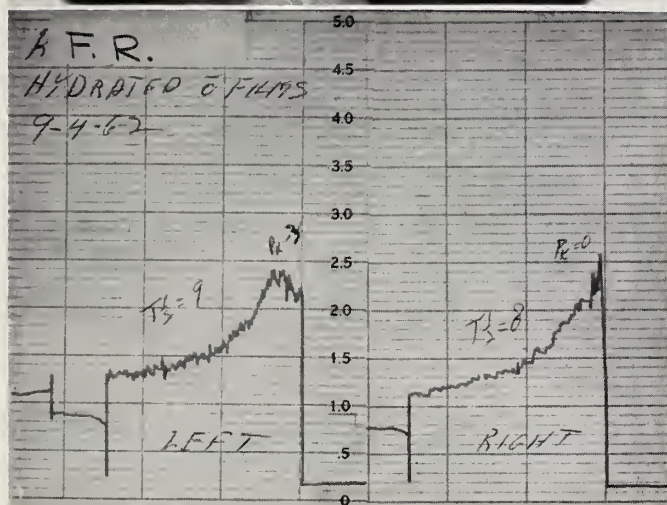


Figure 3 (Case 3).—Two-minute intravenous pyelogram film shows small, contracted right kidney with pyelectasia and poor function. The left kidney appears normal.

Supine aortogram reveals small right renal artery without constriction. The left renal artery appears normal.

Renogram shows no significant function on the right. T max on the left is normal, but T  $\frac{1}{2}$  is prolonged.

venous pyelogram showed the right kidney 2.2 cm smaller than the left in vertical height. At two minutes there was no contrast media on the right while on the left contrast media was easily seen at that time. Later films at ten and fifteen minutes showed greater concentration on the right than the left. The left kidney as visualized by an intravenous pyelogram, was considered normal. An aortogram showed bilateral constricting lesions, more pronounced on the right with accentuation in the up-right position, and accompanied by post stenotic dilatation on the right. This was later confirmed at operation. The renogram showed a short, low amplitude tubular phase with a greatly prolonged half time of the downslope on the right. On the left the curve was essentially normal in appearance, but the T  $\frac{1}{2}$  of the downslope was slightly prolonged.

CASE 3. The patient was a 49-year-old white housewife with a long history of right chronic pyelonephritis. The first episode of pyelitis was in

1933 and she had had catheter drainage of pus from the right kidney. In 1941 she had a similar episode, and a total of 27 ureteral dilations for a "kink" in the right ureter had been carried out. In 1946 an intravenous pyelogram showed no stricture of the right ureter. From 1941 to the present time she had numerous episodes of right flank pain, tenderness and dysuria. In 1960 for the first time she was told she had hypertension. When seen at UCLA for the first time she complained of "pain in the right side of my back" of three weeks' duration.

On physical examination she was noted to be obese and hirsutic. The blood pressure lying was 170/80 mm of mercury. Other positive physical findings were Grade 2 arteriolar narrowing of the fundic vessels with mild AV nicking. The heart was not enlarged, but there was a Grade 1 non-radiating aortic systolic murmur. There was rather pronounced tenderness to palpation in the right costovertebral angle, the right flank and the right lower quadrant of the abdomen, but no masses were felt.



On microscopic examination of urinary sediment, one to two erythrocytes per high power field were noted, but no leukocytes. The urine was negative for protein or sugar. A urine culture grew *E. coli*. Results of blood cell counts and of electrolyte determinations were within normal limits, as were an electrocardiogram and an x-ray film of the chest. Creatinine was 1.16 mg per 100 ml.

Split function kidney studies showed right urine flow to be about one third as much as the left. An intravenous pyelogram showed a small contracted right kidney with minimal function at two minutes. The left kidney showed good function at two minutes. Later films showed the calyces to be blunted, with poor filling on the right. An aortogram showed small right renal artery without constriction. The left renal artery and vascular pattern appeared normal. The renogram showed no significant function on the right. The tubular phase and peak on the left were normal, but again there was minimal delay in emptying, as seen by the increased  $T \frac{1}{2}$  of the downslope.

#### DISCUSSION

Of primary interest in this study is the number or the proportion of "false negative" renograms, and to a lesser extent the "false positives."

It is difficult to find criteria by which to judge the renogram. No ultimate test or pathological examination is available on most of these patients. Therefore, it should be clearly understood that the intravenous pyelogram and the aortogram, which were used for comparison in this study, have their own possibility of error; their use does not necessarily indicate that they are more valid, superior to or more accurate than the radiorenogram. Because of the wide acceptance of the intravenous pyelogram and the aortogram it is of great practical interest to determine how the renogram correlates with them, and whether it can be used as a screening test. The terms "false positive" and "false negative" are not meant to imply that the renogram is necessarily in error, but rather the type of non-correlation.

In our study of 70 kidney sites there were eight cases in which the renogram was "negative" while either the aortogram or the intravenous pyelogram showed an abnormality. In five of the eight cases the discrepancy was with the aortogram, which showed some narrowing of the renal artery or arteries. The other three cases showed intravenous pyelogram abnormality—delayed visualization and poor filling or concentration. If the aortogram and intravenous pyelogram are valid, then there is an 11 per cent false negative index. However, there is controversy as to whether or how much renal artery narrowing produces renal ischemia and injury or disease of the kidney. If one were to assume that minimal nar-

TABLE 2.—"False" Results Obtained by Radioactive Renogram, Assuming Information Obtained by Intravenous Pyelogram or Aortogram Was Correct

35 Patients (70 Kidneys)	
<i>I. False Negatives: 11 Per Cent</i>	
Eight negative renograms while either the intravenous pyelogram or aortogram, but not both, showed an abnormality.	
A. Five of eight cases showed aortogram abnormality of minimal narrowing, fibromuscular hyperplasia etc. of renal artery.	
B. Three of eight cases showed intravenous pyelogram abnormality of delayed visualization or poor concentration.	
<i>II. False Positives: 14 Per Cent</i>	
Ten positive renograms while both the intravenous pyelogram and aortograms were negative.	
A. Renogram abnormality	
1. In all ten cases the $T \frac{1}{2}$ was prolonged.	
2. In three of the ten cases the $T$ max was also prolonged.	
B. In each of these ten cases the opposite kidney was diseased as proven by two or more of the other studies.	
1. In five cases all three studies were positive for the other kidney.	
2. In three cases the aortogram and renogram were positive for the other kidney with the aortogram showing minimal to marked narrowing of the renal artery.	
3. In two cases the intravenous pyelogram and renogram were positive for the other kidney; poor concentration in one and a renal calculus in the other case.	

rowing produces no ischemia, then this would of course reduce the number of our true false negatives. Concerning the intravenous pyelogram, we believe that delayed visualization and poor concentration by one kidney as compared with the other certainly is valid evidence of renal disease, usually owing to vascular abnormality. Furthermore we believe that visualization delayed to five minutes bilaterally is consistent with disease.

There were ten cases in which the renogram was "positive" and the aortogram and intravenous pyelogram "negative." In all ten cases the  $T \frac{1}{2}$  was prolonged while in seven of the ten cases the  $T$  max was within normal limits. In each of these cases the other kidney in the particular individual was diseased, as proven by one or more of the other studies. Cases 1 and 3, herein reported, demonstrate this very well: There was severe renal disease on one side, proven by all three studies, and yet the other kidney was normal on the intravenous pyelogram and aortogram, but abnormal on the renogram because of the prolongation of the  $T \frac{1}{2}$ . This leads one to speculate on the possibility that a "false positive" renogram in the presence of proven disease of the other kidney may in reality not be a false positive, but in some cases may be indicative of

the presence of minimal disease in the other kidney that is not yet discernible in an intravenous pyelogram or aortogram. Another possibility is that because of disease in one kidney, activity or function of the other kidney is impaired in some way, perhaps by hypertension, which commonly accompanies unilateral renal disease (Table 2).

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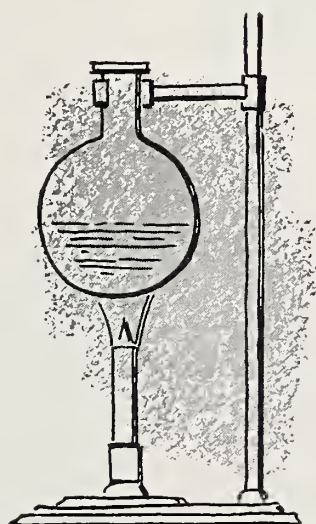
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# Orthostatic Renal Arteriography

JOSEPH J. KAUFMAN, M.D., and MORTON H. MAXWELL, M.D., Los Angeles

THE ADVANTAGES of renal arteriograms taken with the patient erect have been the subject of several preliminary reports.<sup>3,4,5</sup> The purpose of this paper is to review our experience with the technique in 42 cases and to emphasize its value in the diagnosis and understanding of renal arterial conditions associated with hypertension. Arteriograms in the erect position may be made by three techniques: The percutaneous transfemoral catheterization method, the percutaneous transaxillary artery catheterization method, and the direct translumbar aortic puncture approach.

It is possible that intravenous aortography<sup>8</sup> or counter-current brachial artery injection technique<sup>2</sup> can be done with the patient in the standing position, but so far as we could determine this has not been attempted and it would appear that the danger of syncope would be greater than with other methods. Although other investigators are employing erect translumbar aortography,<sup>6,9</sup> our experience has been limited to the percutaneous transfemoral and percutaneous left axillary artery catheterization methods.

We use the Elema-Schonander unit which, since it can be rotated 90 degrees, allows the patient to

• Orthostatic renal arteriography has served to provide better delineation of the renal arteries, to better define stenotic lesions of these vessels and to point to a possible relationship between excessive renal mobility and the development of mural hyperplasias of the renal artery. It is suggested that where facilities permit, orthostatic renal arteriography be employed as a method of obtaining a better understanding of renal artery architecture and function in patients who are being studied for secondary hypertension.

stand during the performance of the test. Using the percutaneous transfemoral method, the catheter is placed in the aorta with its tip at the upper border of the second lumbar vertebra as determined by a preliminary film. The placement of the catheter is done according to the technique of Seldinger.<sup>7</sup> After an injection and films in the recumbent position, the catheter is taped to the thigh and the patient is assisted off the table, with care taken to keep the leg extended. He then assumes an erect position at the Elema unit, the catheter is connected to the Gidlund injector and a second series of films is made (Figure 1). The patient is then helped onto a bed and after the films have been developed and found to be satisfactory the catheter is removed.

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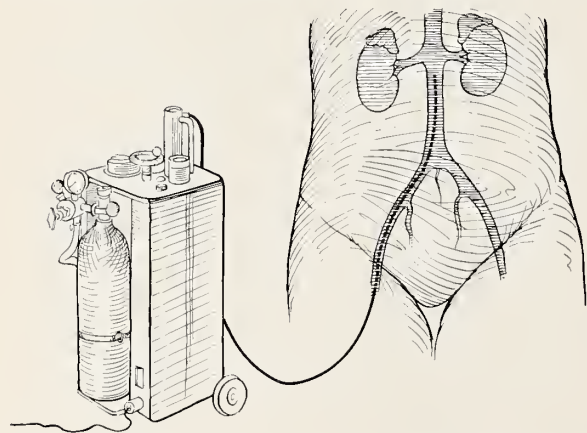


Figure 1.—Diagram of technique of percutaneous transfemoral upright renal arteriography, showing Gidlund injector.

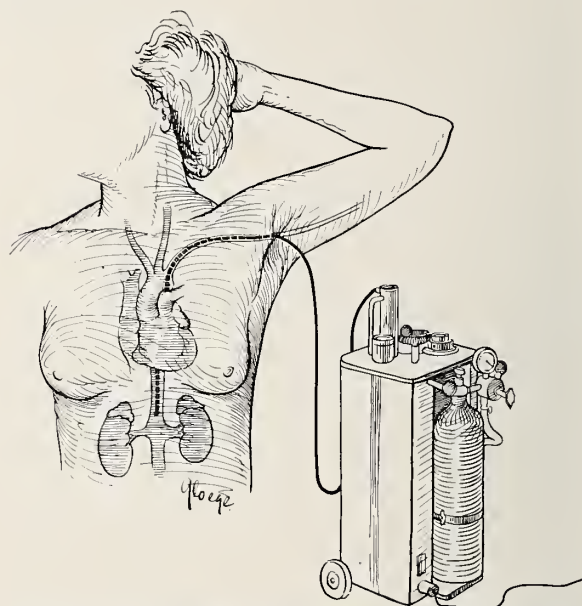


Figure 2.—Diagram of percutaneous transaxillary renal arteriography with the patient in the erect position.

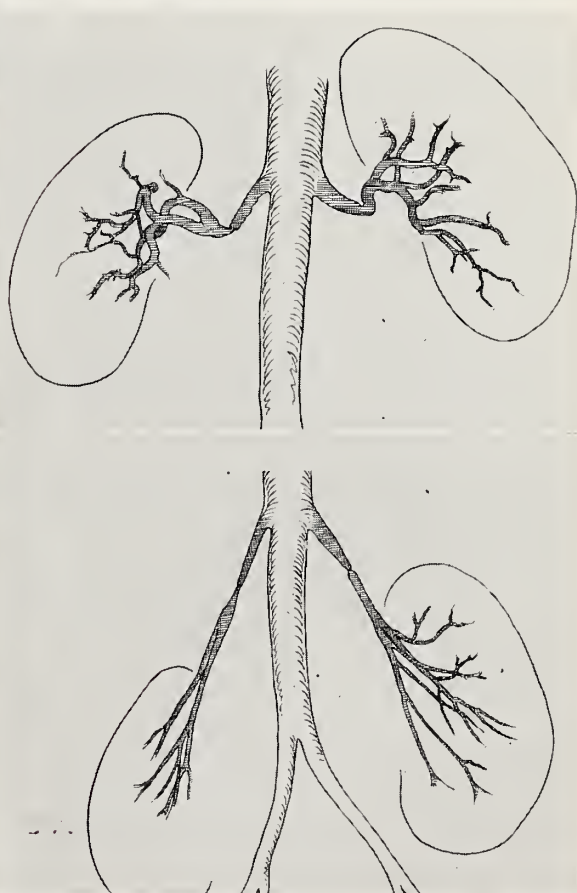
The left transaxillary catheterization method is also performed under local anesthesia. With the patient's left arm outstretched the physician locates the point of axillary pulsation. Next the axillary artery is punctured and after the guide-wire is advanced into it for a short distance the catheter is threaded over the wire and is directed down the descending aorta under fluoroscopic control. The image-intensifying screen and television monitor are used with this technique. With the catheter in place in the upper abdominal aorta just below the diaphragm, the patient rises and walks to the Elema unit where he remains upright. It has been found advantageous to occlude the opening at the terminal end of the catheter with an obturator which is threaded through a branch at the proximal end. The injected dye then issues from side holes at a 90 degree angle close to the tip of the catheter.<sup>1</sup> Figure 2 shows the posture of the patient during the performance of the upright arteriogram with the transaxillary technique. The transaxillary method of arteriography is of particular value in patients whose iliac vessels are sclerotic and narrowed.



Figure 3.—Orthostatic transfemoral renal arteriogram showing normal (but duplex) arteries in a young woman being studied for hypertension. Note straight course and excellent filling of renal vessels with practically no overlying vessel opacification.



Figure 4.—*Above*, recumbent renal arteriogram showing right renal artery stenosis, but no definite lesion of the left renal artery. *Below*, erect arteriogram showing bilateral renal artery stenosis. Bilateral nephroptosis is present and both renal arteries are elongated in the erect position. With tortuosity of left renal artery straightened out in the upright position, the lesion is clearly seen.





There are several advantages of orthostatic renal arteriography. The renal arteries are better delineated than in conventional techniques. With the patient upright the kidneys usually descend, putting traction on the renal arteries. Tortuosity is thus eliminated to a great extent and areas of narrowing or dilatation are seen better. In addition, there is less filling of other vessels which frequently overlie and obscure the renal arteries. Figure 3 is a normal arteriogram showing bilateral duplex arteries without significant stenosis. On two occasions films taken in the erect position showed stenotic lesions which were not apparent in the recumbent films. This is illustrated in Figure 4. The patient was a 42-year-old woman with hypertension whose recumbent arteriograms (Figure 4, A) demonstrated a narrowing at the junction of the proximal and middle thirds of the right renal artery with slight irregularity, suggesting mural hyperplasia, and minimal post-stenotic dilatation. A similar lesion on the left side representing an early stage of stenosis was not seen in the supine films, but was evident in the orthostatic arteriogram (Figure 4, B).

Erect arteriograms have frequently disclosed surprising degrees of elongation of the renal arteries, particularly in women and customarily on the right side in association with exaggerated renal ptosis (as much as 2 vertebral bodies). Of 42 patients in whom orthostatic arteriograms were made, 33 were women. Twenty-seven (82 per cent) were found to have exaggerated renal ptosis. Eighteen of the 33 women were found to have stenotic lesions, while nine were observed to have elongated arteries associated with renal ptosis and renal torsion, but without anatomical constriction of the vessel lumen.

In this small and selected group of hypertensive persons, there was a frequent association of renal ptosis and stenotic lesions of the renal artery. Nine of 33 hypertensive women without significant stenotic lesions of the renal artery showed pronounced ptosis and torsion of the kidney associated with renal artery elongation (Figure 5).

Although fibromuscular hyperplasia of the renal artery has been encountered without renal ptosis, in the present series it was frequently associated with excessive renal mobility. In most cases of fibromuscular hyperplasia reported in the literature the patients were women and the lesion was on the right side; and (although this was not specifically mentioned) the lesion is frequently seen in the presence of renal ptosis. It is interesting to speculate on the importance of renal artery stretching and relaxation with various changes of posture as etiologic factors in the development of mural hyperplasias of the renal artery.

Only one significant complication occurred in the



Figure 5.—Upright arteriogram in a 38-year-old woman with "orthostatic hypertension." No stenotic lesion is seen, but severe degree of right renal ptosis and torsion suggests the possibility of impeded blood flow to that kidney.

group of 42 patients in whom we carried out erect arteriography. A 38-year-old woman had an uneventful transfemoral procedure and was discharged from the hospital the following day. A massive hematoma in the thigh developed over the next few days and the patient was returned to the hospital the fourth day after discharge. She was treated with bed rest and careful observation and the hematoma gradually resolved. Final resolution, however, was not evident for six weeks. It is difficult to state categorically that this complication resulted from the erect procedure, since delayed hematomas are seen in a small percentage of cases in which the procedure is performed without having the patient walk and stand to obtain upright studies.

We have seen no syncope or other untoward reactions from the performance of erect arteriograms, although this is a distinct possibility. To minimize the possibility, the dosage of premedication (secobarbital, meperidine) should be less when the patient is to stand up than would be used for the procedure with the patient remaining recumbent.

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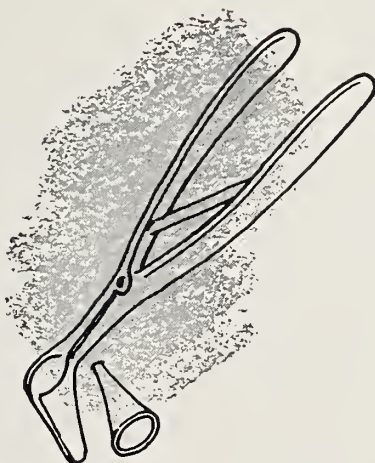
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# Coumarin Therapy

## Prothrombin Activity After Termination of Treatment

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THE FEASIBILITY and practicality of anticoagulant therapy are well established. The results, as judged by decreased incidence of recurrent myocardial infarction, have encouraged widespread use of such agents as Dicumarol® and coumarin.

Although the use of anticoagulants can safely be continued over long periods, it may eventually be desirable in some cases to terminate use of the drugs. Occasionally an apparent reactivation of thrombotic tendency follows discontinuation of anticoagulant therapy. This is at times a drastic occurrence, seriously threatening the life of the patient. It is possible that such events are fortuitous extensions of chronic vascular change; on the other hand, the second thrombotic episode might be related to a hypercoagulable state.

There is general agreement that the use of coumarin derivatives is associated with a decrease in plasma levels of prothrombin, proconvertin, plasma thromboplastin component and Stuart factor.

It has been suggested that the recurrence of a hypercoagulable state might be related to a "rebound" of these factors whose production was inhibited during the period of treatment. If a rebound phenomenon were the anticipated result of abrupt termination of therapy, one might reasonably propose to alter the therapeutic regimen to allow for a tapering period.

A number of workers have been intrigued by the occurrence of thrombosis following cessation of anticoagulant therapy and have undertaken studies in an attempt to determine if demonstrable changes occurred in coagulation systems on the abrupt discontinuance of coumarin derivatives.

Dixon and Vander Veer,<sup>1</sup> who did such a study, said: "It has been our impression that the reactivation of the original pathologic process and various thromboembolic complications may follow the abrupt cessation of anticoagulants. These occurrences have often been dramatic and catastrophic." In their study of 20 case histories, they were unable to decide if the thrombotic recurrences were due to

• Twelve patients receiving coumarin type hypoprothrombinemic agents were studied before, during and after termination of therapy, the prothrombin proconvertin method having been used to assay the prothrombin activity complex. In no instance was post treatment "rebound" demonstrated.

Prothrombin activity levels returned to pre-treatment values only after ten days following termination of coumarin or Dicumarol administration.

If a reactivation of thrombotic tendency occurs following discontinuance of anticoagulant therapy, it would not appear to be related to a "rebound" of prothrombin activity above that which is "normal" for the individual patient.

Patients tend to return to the same level of prothrombin activity present before initiation of coumarin therapy.

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the mode of withdrawal from the drug, or to the mere cessation of anticoagulant therapy.

Sise,<sup>2</sup> in a study of 239 patients on long term therapy, concluded that stopping anticoagulants for brief periods for tooth extractions or other surgical procedures involves no great risk. On the other hand, if bleeding occurs, necessitating sudden withdrawal of anticoagulants and administration of vitamin K<sub>1</sub>, one may anticipate complications in the form of myocardial infarctions, sudden death or stroke in approximately 50 per cent of patients.

Various hypotheses have been offered to explain these observations; Dixon and Vander Veer suggested two possible causes: (1) "Rebound hypercoagulation, and (2) the possible effects of anticoagulants (and their discontinuance) on a disordered coronary blood flow.

### MATERIAL AND METHODS

The present study was undertaken to see if a rebound period of hypercoagulation could be demonstrated. Plasma prothrombin activity was measured in patients during anticoagulant therapy and more particularly during the period immediately following termination of this therapy.

The study included patients scheduled to receive coumarin therapy for various thrombotic states on

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**TABLE 1.—Clinical Indications for Anticoagulants and Secondary Diagnosis of the Patients Under Consideration**

Patients	Primary Disease	Age	Duration of Treatment* Days	Reversal Period† Days
1	Myocardial infarction .....	50	37	10
2	Myocardial infarction .....	71	14	7
3	Myocardial infarction .....	82	15	12
4	Myocardial infarction .....	42	19	14
5	Myocardial infarction .....	45	43	7
6	Myocardial infarction .....	73	29	21
7	Myocardial infarction .....	75	31	11
8	Carotid artery insufficiency .....	65	89	10
9	Myocardial infarction .....	78	15	9
10	Myocardial infarction .....	66	20	8
11	Myocardial infarction .....	63	58	7
12	Rheumatic heart disease, fibrillation, emboli.....	52	67	10

\*Days prothrombin activity under 50 per cent.

†Days from termination of treatment to return to stabilization of prothrombin activity.

the medical service of a large general hospital. The age span of these patients was from 42 to 82 years. The patients under study received either coumarin or Dicumarol. The period of therapy ranged from 12 to 89 days with prothrombin values in therapeutic range. Patients were observed for from six to twenty-two months after cessation of therapy.

Laboratory studies included an estimation of prothrombin activity as determined by the Ware-Stragnell<sup>3</sup> modification of the prothrombin proconvertin system. This test was chosen because it utilizes a dilute plasma system, and accordingly is sensitive to higher values of the prothrombin activity complex. Prothrombin activity of the patients under study was determined before initiation of treatment and during treatment. Following conclusion of treatment, determinations were continued until prothrombin activity levels had stabilized for one week. (A number of patients had to be removed from the study group because there was inadequate follow-up preceding discharge from the hospital.) Adequate clinical and laboratory observation was available on 12 patients.

## RESULTS

Table 1 summarizes the variety of indications for anticoagulant therapy in the patients considered in this study. For purposes of this table, duration of

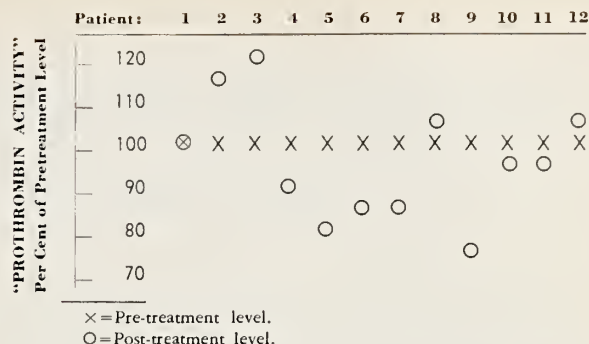


Chart 1.—Post-therapy levels of prothrombin activity related to pretreatment level for each patient.

therapy is defined as that period of time during which prothrombin activity was assigned a value of 100 per cent. Thus a total of 12 patients varying in age from 42 to 82 years received either Dicumarol or coumarin (Warfarin) for a period ranging from 18 to 89 days. Following termination of therapy the prothrombin activity stabilized in from 7 to 21 days at a level comparable to pretreatment activity.

This point is further demonstrated in Chart 1 where post-therapy levels of prothrombin activity are related to the individual's pretreatment prothrombin activity taken as 100 per cent. On this basis the patient's post-therapy level of activity is properly compared with his own pretreatment level rather than with an arbitrary standard. Of some interest is the observation that pretreatment levels were not achieved for an average of ten days after therapy was discontinued. In this small series the time required from abrupt termination of anticoagulant therapy until pretreatment prothrombin activity was achieved, ranged from 7 to 21 days. There was no recurrence of thrombosis in less than six months.

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# Intravenous Ether Anesthesia

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THE INDUCTION and maintenance of anesthesia by injection of drugs intravenously has several advantages over that produced by inhalation of gases or vapors. The distress and fear associated with a face mask is eliminated, and the impact of irritating vapors on protective reflexes is avoided. Ventilation does not limit the rate at which induction is achieved nor the rate at which anesthetic depth is increased. The depth of anesthesia may be maintained or altered even in apneic patients.

These advantages are of particular value in laryngoscopy and bronchoscopy, for in those procedures the respiratory tract of the patient must be shared by surgeon and anesthetist, with the anesthetist sometimes excluded. Hence ventilation during endoscopy is often interrupted or compromised and inhalation anesthetic agents introduced into the respiratory tract may be removed by suction or diluted by room air. Anesthetic vapor is often irritating to the endoscopist, and the combination of vapor and room air sometimes produces refractions which obscure his view.

Two classes of anesthetic drugs are often given intravenously: the barbiturates and the narcotics. These drugs have several serious drawbacks. Barbiturates produce hypnosis but not analgesia except with doses that produce profound respiratory and circulatory depression. Narcotics, as commonly used, produce analgesia but inadequate hypnosis. If enough is given to bring about hypnosis, profound respiratory and circulatory depression may result. The combining of barbiturate and narcotic does not eliminate the hazards associated with their individual use. In addition, an overdose of these agents cannot be readily eliminated as can agents that are eliminated through the lungs. An inhalation agent given intravenously might possess the advantages of both techniques. Several inhalation agents may be given by vein but usually require fat emulsions as a solvent.<sup>16</sup> However, diethyl ether can be dissolved in adequate concentrations in any of the solutions commonly given intravenously.

The use of ether intravenously was extensively

• From a study of intravenous ether anesthesia, it was concluded that ether diluted to a 5 per cent solution in 5 per cent dextrose and water may be used to induce and maintain a smooth and easily controlled anesthetic state similar to that obtained with inhalation ether but without the dependence of the latter technique on ventilation. Cough and laryngospasm were absent. Adequate spontaneous respiration can be maintained with this technique. The technique is particularly useful in endoscopy during which the airway is often not available for anesthetic administration.

investigated by Burkhardt in 1909 and 1911.<sup>3,4,5</sup> He found that anesthesia could be induced in 8 to 10 minutes with 300 to 600 ml of a 5 per cent (volume in volume) solution of ether in saline solution. Concentrations greater than 5 per cent produced hemolysis and thrombophlebitis and lesser concentrations necessitated introducing undesirably large total volumes. The anesthetic course was uneventful and no adverse circulatory or respiratory effects were noted. Postoperative vomiting was rare. Thrombophlebitis occurred infrequently despite the use of a cut-down and cannula. No untoward effects were found even in seriously ill patients. No cases of pulmonary edema were noted in these or other reports despite the volumes injected. Burkhardt suggested, however, that ether should not be given intravenously to plethoric, anemic, nephritic or arteriosclerotic patients. Following his reports, several similar studies were published confirming most of his observations.\* However, Dieterich<sup>7</sup> found excitement on induction and other investigators noted postoperative thrombosis to be frequent.<sup>14,21</sup> After 1914 interest in this technique waned and few subsequent publications on its use can be found.<sup>7,9,22</sup>

Recently we reinvestigated intravenous ether anesthesia. Our work was divided into two parts: (1) reconfirmation of the results initially obtained by Burkhardt and (2) application of the technique to bronchoscopy and laryngoscopy, where we felt it might be of particular value.

To determine the concentration of ether which caused hemolysis, blood was mixed with an equal

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\*References 1, 2, 7, 8, 11, 13-15, 17-19, 21, 22.

volume of ether solutions of various concentrations and allowed to stand for 10 minutes. Plasma was then separated by centrifugation and observed for gross hemolysis. No hemolysis was apparent with 5 per cent ether but a slight amount was detected at 6 per cent and an increasing amount as concentration increased beyond this point.

Fifty patients were selected for study. The technique was not used if (1) a flammable anesthetic was contraindicated or (2) the patient was in congestive or renal failure. Patients' ages ranged from 4 to 68 years, and there were 31 females and 19 males. Preanesthetic medication consisted of pentobarbital and/or a narcotic (usually morphine) and/or a vagolytic (atropine or scopolamine). Dosage was varied to suit patient age and physical status.

Ether was dissolved in 0.9 per cent saline solution or in 5 per cent dextrose in water. When we gave large volumes (1,500-2,000 ml) of saline in one to two hours, the mucous membranes of the eyes and mouth often appeared edematous. No other untoward effect was noted. With dextrose solution, edema was not seen. The solutions were refrigerated before mixing and were often still cold when injected. The volume of ether (Squibb) to be added to the solution to make a 5 per cent (volume in volume) solution was determined by multiplying the volume of solution by 0.0526. For example, 52.6 ml of ether was added to exactly one liter of dextrose solution. After the ether was added, the flask was vigorously shaken until the ether could no longer be seen as a layer at the top. An intravenous infusion was started with a needle sufficiently large (15 to 18 gauge) so that the solution could flow as a stream rather than as individual drops. Before injection, a heparinized blood specimen was drawn for a control. In several cases electroencephalographic (EEG) tracings were taken as the ether solution was started and were continued throughout the procedure. Thiobarbiturate (200 to 400 mg) was usually given before starting ether. When ether solution was used for induction without previous administration of a barbiturate, patients complained of pain in the vein used. Most of the pain could be eliminated by warming the solution or by injecting 100 mg of lidocaine through the needle and holding it at the site of injection for 2 to 3 minutes by use of a tourniquet. Even with pain eliminated, induction with ether alone was often marred by excitement. With the infusion running freely plane 2, stage 3 or EEG level IV was reached in 5 to 15 minutes after injection of 250 to 600 ml of solution (Figure 1). Much more rapid onset of anesthesia could be obtained if the ether solution was infused under pressure (Figure 2). Stage IV could be

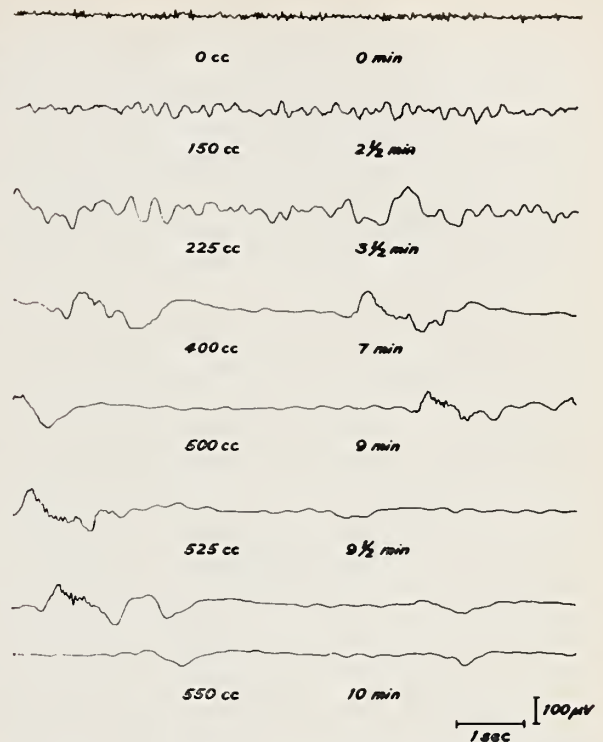


Figure 1.—A typical electroencephalogram recording with 5 per cent ether administered as rapidly as it would flow through a 16 gauge needle. At 0 minutes a level I recording of low voltage-high frequency was seen. After 2½ minutes infusion of 150 cc produced a change to level II or III. After 3½ minutes and 225 cc a level III pattern (a chaotic pattern of high voltage-low frequency) was noted. By 7 minutes 400 cc had been administered and an electroencephalogram level IV (a chaotic pattern of high voltage-low frequency with 1 to 3 seconds of burst suppression) was reached. Level V (same as level IV but with 3 to 10 seconds of burst suppression) was attained at 9 minutes after infusion of 500 cc. Level VI (same as level IV but with burst suppression longer than 10 seconds) and level VII (isoelectric electroencephalogram) was reached at 10 minutes after administration of 550 cc of ether solution.

reached in 2 to 4 minutes under these conditions. However, this accelerated induction was often accompanied by hypotension. EEG changes paralleled clinical signs of anesthesia and were similar to the patterns described by Courtin and coworkers<sup>6</sup> for inhalation ether. If the infusion was stopped after EEG level IV was attained, the EEG trace rapidly returned to level I (Figure 2 and 3). Although excitement occurred with ether induction, coughing and laryngospasm were not problems regardless of the rate of infusion, nor was the odor of ether offensive to the patient.

After induction, the patient was allowed to breathe oxygen or oxygen-nitrous oxide via a face mask from a semi-closed or closed circle system. Ventilation often appeared depressed and was assisted or controlled if necessary. Anesthesia could



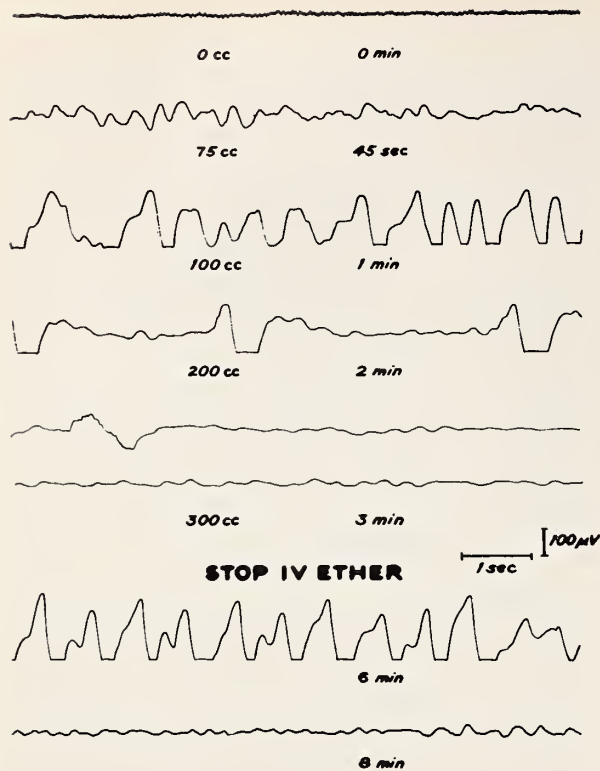


Figure 2.—In this experiment the ether solution was injected as rapidly as possible with a syringe through an 18 gauge needle. Initially a level I electroencephalogram tracing was seen. By 45 seconds this had changed to level II or III and by 1 minute to a definite level III. Level IV was reached in 2 minutes, and by 3 minutes level VI or VII was attained. The patient was apneic and hypotensive at this time and the infusion was halted. Three minutes later a level III record was attained and 2 minutes after this (8 minutes after the start of the ether infusion) a level II or I pattern reappeared. By this time the patient's vital signs had returned to normal.

be maintained at any desired level<sup>9</sup> and could be made sufficient for all surgical procedures. Although respiration appeared somewhat depressed, circulation as measured by blood pressure remained adequate unless infusion was very rapid. The rate of infusion required for maintenance of anesthesia (500 to 1,000 ml in the first hour) was considerably less per unit time than that required for induction.<sup>9</sup> In addition, the maintenance requirements themselves fell as time passed (300 to 500 ml was required during the second hour).

At the end of the procedure a heparinized blood specimen was drawn. The plasma from this sample was compared for gross hemolysis with that taken before induction. In one case slight hemolysis was noted. In this case, 6 per cent ether had been used due to an error in calculation. The urine was examined after anesthesia in all cases. In no case was gross hemoglobinuria found. Twenty of the 50 patients (40 per cent) were nauseated post anestheti-

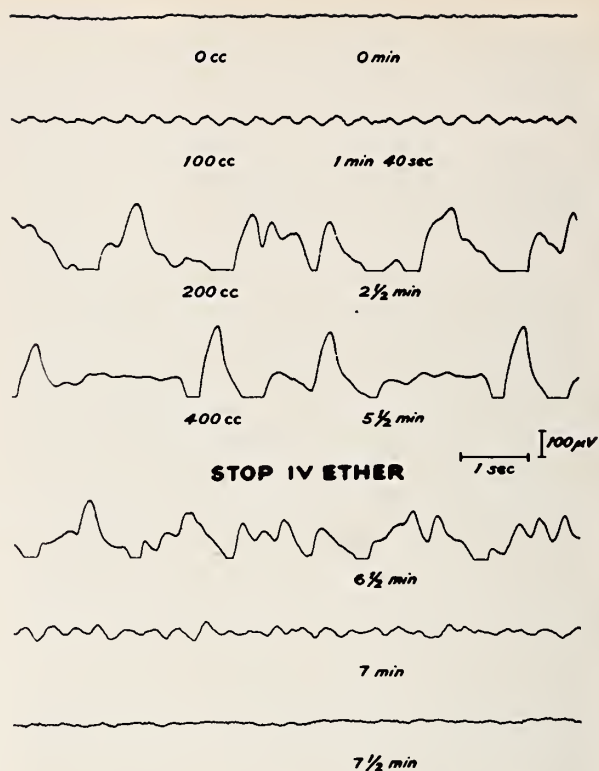


Figure 3.—Ether solution was allowed to flow (16 gauge needle) in this case until level IV was reached. Infusion was halted at this time to show the rapid recovery that occurs before saturation of the body with ether. At 0 time a level I pattern was seen. By 1 minute 40 seconds, level II (rhythmical low frequency waves of 100-200 microvolts amplitude) was obtained. Level III was reached in 2 1/2 minutes and level IV at 5 1/2 minutes after administration of 400 cc of solution. The ether infusion was stopped at 5 1/2 minutes and by 6 1/2 minutes had returned to level III; by 7 minutes to level II; and by 7 1/2 minutes to level I.

cally and 18 vomited (36 per cent). If the patients are divided into those who received less than 1,000 ml of solution (26 patients or 52 per cent) and those who received more than 1,000 ml (24 or 48 per cent) a striking difference was found in incidence of nausea and vomiting. Of those who received less than 1,000 ml, three (12 per cent) were nauseated and one (4 per cent) vomited. Of those who received more than 1,000 ml, 16 (66 per cent) were nauseated and vomited. Three patients (6 per cent) had post operative phlebitis at the infusion site and three others had thrombophlebitis. Hot packs were applied to the affected area and all recovered without incident.

It was noted that pure ether dissolved the plastic material used in disposable infusion sets and syringes. It was not known whether the ether solutions would act similarly. To test this, the infusion tubing used in nine cases was rinsed with water and dried with suction. The average weight of these tubes

was compared with the average of four unused sets. No difference was found between the two groups.

Bronchoscopy or laryngoscopy was the operative procedure for 20 of the 50 patients. The anesthetic management was slightly altered in these patients. Pre-anesthetic preparation and induction were similar, but after induction the larynx and trachea were topically anesthetized either by translaryngeal injection or by spray during direct laryngoscopy (under the intravenous ether anesthesia). The latter approach to topical anesthesia had the advantage of aiding in the evaluation of the adequacy of anesthesia for endoscopy. Following the topical application, anesthesia was deepened if necessary. Endoscopy was accomplished without difficulty in 17 of the cases. In three cases the masseter muscles remained tense despite anesthesia almost to the point of apnea. In these cases, a very small dose of curare (1-3 mg) produced adequate relaxation. Occasionally, despite the topical anesthesia, the patient would react to instrumentation by coughing. Giving additional ether overcame this difficulty, but 25 to 50 mg of thiopental usually produced the desired result more rapidly. Larger doses of barbiturate (50 to 100 mg) often produced apnea. Although ventilation appeared adequate in most cases, oxygen was insufflated to diminish any possibility of hypoxia. The range between the amount of anesthetic that produced adequate conditions for endoscopy and that which produced significant respiratory depression appeared to be narrower than with inhalation ether. This may be because an anesthetic given intravenously is not subject to the limitation that decreased ventilation imposes on further deepening with an inhalation anesthetic.

The use of intravenous ether anesthesia for endoscopy has been well received both by surgeons and anesthetists. Although it is not a perfect anesthetic it does not have many of the hazards of other techniques. For example, when intravenous barbiturates and muscle relaxants are used, the time for endoscopy must be limited lest hypoxia and hypercarbia occur.<sup>10</sup> If cuirass or chest respirator<sup>12</sup> is used in addition, then ventilation may be adequate but is difficult to monitor visually or by auscultation. Either case involves the use of fixed agents which cannot be eliminated via the respiratory tract. Insufflation of general anesthetic agents entails difficulties already mentioned. The administration of inhalation anesthetics through a small endotracheal tube rather than by insufflation results in a great reduction in airway diameter and hence an increase in resistance to breathing.<sup>26</sup> In addition the tube may obstruct the view of the endoscopist.

In comparison with the drawbacks associated with these techniques, ether anesthesia given by vein produces a stable level of anesthesia which is

adequate for prolonged endoscopy (15 to 30 minutes). Ventilation during this period remains adequate. Equally important is that ventilation can be monitored visually or by auscultation. Although there is ether in the exhaled air, it is not of great enough concentration to be irritating or cause refractive problems. Elimination of the agent may be accelerated by hyperventilation. Nausea and vomiting are infrequent if less than 1,000 ml of solution is used.

The technique has some obvious drawbacks. Some of these are inherent in the agent, ether: (1) fairly long recovery if saturation has occurred, (2) post operative nausea and vomiting and (3) flammability. Flammability is a lesser problem with this technique than with ether insufflation, in which concentrations of 10 to 30 per cent may be required. With the intravenous route, the highest exhaled concentrations are between 3 and 6 per cent and approach the lower limit of flammability. Other drawbacks include: (1) a narrow range between adequate anesthesia and depressed respiration: (2) a moderately long period of induction: Ten minutes is about average and 15 to 20 minutes may be required if the intravenous flow is not rapid enough; and (3) administration of a fairly large volume of solution (1 to 1.5 liters) intravenously in a short time (one hour).

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### CORRECTION

A MISSTATEMENT of the strength of a drug solution appeared in the article *Insect Sting Anaphylaxis* which was published in the September issue of CALIFORNIA MEDICINE.

The error is on page 170, in item (d) under the subhead *Second Stage Treatment*. The second sentence of item (d) should read: Chlorpheniramine maleate (Chlor-Trimeton®, 10 mg per cc) . . .

As it appeared, the amount was given erroneously as 100 mg per cc.

# Perinatal Mortality and Survival

## PART II—COMPARISONS BETWEEN POPULATION GROUPS

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WHAT ARE SOME of the characteristics of babies who live at least one month after birth as distinguished from those who do not survive? The California State Department of Public Health has made an analysis of descriptive items from 369,304 birth and death certificates of infants born in 1959 and of 252,400 certificates of those born in 1949 in order to identify demographic characteristics associated with perinatal mortality and survival. Part I of this report discussed differences found between the two years for (1) proportions of fetal deaths, neonatal deaths and surviving infants among population groups; (2) for causes of perinatal deaths; and (3) for geographic areas. The following report presents more detailed data for perinatal mortality and survival in California for all births that occurred during 1959 and identifies "high-risk" groups of infants.

Many factors of heredity and environment determine the death or survival of an individual child; however, certain groups of infants show a greater capacity for withstanding prenatal and natal hazards than others.

If the time span of risk of perinatal death is defined as the period from 20 weeks gestation through 27 days after birth, 97 out of 100 infants born in California during 1959 were born alive and survived their first month. Of all the race, sex and weight groups studied the one with the best survival (99.8 per cent of total births) was 621 female Oriental infants with an average weight of 3,375 grams (7 lbs. 6 ozs.); only one fetal death and no neonatal deaths were recorded among this group.

Fetal and neonatal death rates were the lowest in California's history. Compared with the majority of other states, neonatal death rates were low, although not as favorable as in 13 other states. There were also several other countries where more newborns survived their first month than in California. Table I shows comparisons of high and low rates.

From the Bureau of Maternal and Child Health, California State Department of Public Health, Berkeley 94704.

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Part I (Statistical Trends) appeared in CALIFORNIA MEDICINE, 99:184-188, September, 1963.

• If the time span of risk of perinatal death is defined as the period from 20 weeks gestation through 27 days after birth, 97 out of 100 infants born in California during 1959 were born alive and survived the first month of life. The California State Department of Public Health made an analysis of descriptive items from 358,388 birth and 10,916 death certificates to identify demographic characteristics associated with perinatal mortality and survival. Maturity of the infant was the single most important factor: two-thirds of all perinatal mortality was among infants weighing 2,500 grams or less. An infant premature by any two of three criteria (birth weight, birth length or gestation) had less chance of surviving than an infant premature by only one; infants premature by all three measures had the poorest prospect of being born alive and surviving one month. Nonwhite premature infants fared better than white; Oriental infants of all weights showed remarkable survival capacity. Female infants of all races had a survival advantage over males up to weights of 4,501 grams or more.

Certain "high-risk" groups of infants were identified: Infants premature by more than one criterion, Negro infants, infants who were one of a set of twins or triplets, infants born to older mothers or to very young multiparae, infants of mothers with four or more previous live births, those born by cesarean section, infants of families in low income occupations, infants of military personnel, infants born in county or federal hospitals, those born outside a hospital, those born to mothers who had no prenatal care and those born in northern, mountain counties.

Some of the characteristics most strongly associated with infant survival or loss are discussed in the following sections.

### Maturity at Birth

The most critical factor in the infant's ability to survive is maturity. Birth weight is a convenient and internationally used criterion of prematurity; however, there is obviously a range of individual differences around the usual standard of 2,500 grams or less. Chart 1 shows differences in survival by sex and race at given weights: there is considerable variation, especially at low weights.



## DEFINITIONS

**Live birth**—The birth of an infant, irrespective of duration of pregnancy, which after complete separation from its mother shows any evidence of life.

**Fetal death**—The death of a fetus which after complete birth shows no evidence of life. In California, if it is of 20 or more weeks gestation it must be registered.

**Total births**—Live births plus fetal deaths.

**Neonatal death**—The death of a liveborn infant in the first 27 days after birth.

**Perinatal death**—A death around the period of birth. In this report, a perinatal death is either a fetal or a neonatal death.

**Surviving infant**—An infant who is alive 28 days after birth. Survival percents are calculated from total births (including both fetal deaths and live births). This gives a measure of an infant's chances of being born alive and living at least 27 days after birth.

Length at birth and weeks of gestation are indices of prematurity also available from California birth certificates. A combination of these three measures of prematurity appears to be a more accurate predictor of mortality than weight alone. In 1959, an infant premature by any two of these criteria had less chance of surviving than the infant premature by only one; and an infant premature by all three

TABLE 1.—Comparative Neonatal Mortality Rates: States and Nations\* with Lowest and Highest Neonatal Mortality Rates, 1959

State or Nation	Neonatal Death Rate	Rank Order from Lowest Rate
States, District of Columbia		
Utah .....	15.3	1
California .....	17.3	14
Washington, D.C. ....	27.6	51
Nations		
Netherlands .....	12.0	1
United States .....	19.1	14
Tunisia .....	40.6	40

\*As reported to the World Health Organization; Reports not received from all nations.

Source: U.S. Department of Health, Education, and Welfare, National Office of Vital Statistics, Vital Statistics of the United States, 1959, Section 6.

World Health Organization, Epidemiological and Vital Statistics Report, 14:6:193-195, 1961.

measures had the poorest prospect for being born alive and surviving the first month. (See Table 2.)

## Race and Sex Differences

Of every 100 births of each race, three white, five Negro and two Oriental or other nonwhite (mainly American Indian) were either born dead or died in the first month after birth. Nonwhites other than Negroes had a better chance for survival than whites; Negroes had the poorest survival, with higher than average proportions of both fetal and neonatal deaths (See Table 3).

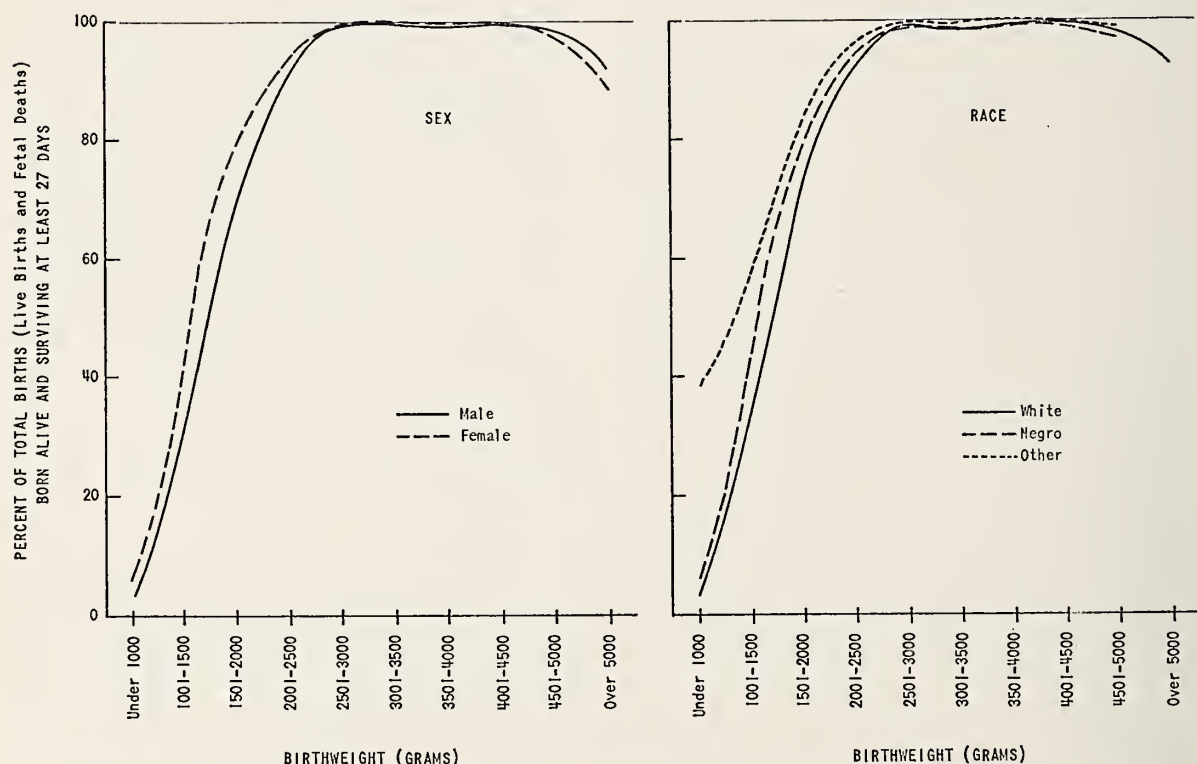


Chart 1.—Sex and Race as Factors in Infant Survival (Deaths of Infants Born in California During 1959).

TABLE 2.—Outcome of Births: Three Criteria of Prematurity

Criteria of Prematurity	Total Births (Live Births+ Fetal Deaths)	Per Cent of Total Births		
		Fetal Death	Neonatal Death	Surviving Infant
Weight,* length,† and gestation‡.....	10,555	13.9	24.6	61.5
Weight and gestation .....	13,783	12.6	22.6	64.8
Length and gestation .....	12,372	12.5	21.3	66.2
Weight and length .....	19,452	11.4	18.4	70.2
Weight only .....	28,469	9.8	15.6	74.6
Gestation only .....	29,731	7.0	11.6	81.4
Length only .....	33,847	7.2	11.0	81.8

\* 2,500 grams or less.

† Less than 18½ inches.

‡ Under 37 weeks.

Female infants of all races had a consistent survival advantage over males up to birth weights of 4,501 grams or more (Chart 1). Nonwhites other than Negroes had the best survival at all birth weights, but particularly for infants in the small weight groups. California data confirm observations made elsewhere in the United States<sup>2</sup> that where whites and Negroes use the same hospitals, the survival of Negro prematures is better than that of whites for each 500 gram weight category of 2,500 grams or less.

Because two-thirds of all fetal and neonatal deaths were associated with prematurity, the incidence and survival of infants weighing 2,500 grams or less was an important factor in the total perinatal mortality record for each sex and race. (Note: Data in the following sections will use weight as the measure of prematurity.) Incidence of these low-weight births varied from 6.8 per cent for white males to 14.6 per cent of female Negro infants (See Table 4). More females than males were premature by the weight criterion, but the survival of female prematures was better than for males.

#### Age of Mother and Previous Live Births

The older the mother and the larger her number of previous deliveries, the higher the incidence of perinatal mortality, even when these two factors were considered independently. The relative importance of fetal and neonatal deaths in total mortality was different for each decade of the mother's childbearing years (Chart 2). Neonatal death rates (deaths per 1,000 live births) were higher among infants of young mothers; fetal death rates were higher among those whose mothers were 40 years of age and over.

In 1959, one in every seven births was to a mother under 20; one-third of these women already had at least one previous delivery of a living infant. While fetal death rates were low for very young

TABLE 3.—Outcome of Births (All Weights): Sex and Race

Sex and Race	Total Births (Live Births+ Fetal Deaths)	Per Cent of Total Births		
		Fetal Death	Neonatal Death	Surviving Infant
Male .....	186,466	1.4	1.9	96.7
White .....	166,186	1.3	1.9	96.8
Negro .....	14,381	2.2	2.8	95.0
Oriental .....	3,587	0.6	1.2	98.2
Other nonwhite .....	2,312	0.8	1.0	98.8
Female .....	176,646	1.2	1.5	97.3
White .....	157,029	1.2	1.4	97.4
Negro .....	14,151	2.1	2.2	95.7
Oriental .....	3,343	0.5	0.9	98.6
Other nonwhite .....	2,123	1.2	0.8	98.0

TABLE 4.—Outcome of Premature\* Births: Sex and Race

Sex and Race	Per Cent of Total Births Premature	Total Premature Births (Live Births+ Fetal Deaths)	Per Cent of Total Premature Births		
			Fetal Death	Neonatal Death	Surviving Infant
Male .....	7.3	13,569	11.0	18.5	70.5
White .....	6.8	11,313	11.3	19.1	69.6
Negro .....	12.4	1,788	10.3	17.4	72.3
Oriental .....	7.8	280	4.6	10.0	85.4
Other nonwhite..	8.1	188	5.3	8.5	86.2
Female .....	8.4	14,900	8.7	12.9	78.4
White .....	7.8	12,305	8.8	13.3	77.9
Negro .....	14.6	2,066	9.1	12.1	78.8
Oriental .....	9.6	320	3.1	7.8	89.1
Other nonwhite..	9.8	209	6.2	5.3	88.5

\* 2,500 grams or less.

TABLE 5.—High-Order Live Births: Father's Occupation and Race

Father's Occupation*	Per Cent of Mothers with Four or More Previous Live Births			
	Total	White	Negro	Other Nonwhite
All occupation groups .....	13.4	12.4	24.6	12.9
Professional .....	9.9	10.0	.....†	5.1
Technical, administrative, managerial .....	10.4	10.4	15.8	6.3
Clerical, sales, skilled workers .....	11.5	10.9	22.2	11.8
Semiskilled .....	14.8	13.5	24.8	17.6
Nonfarm laborers .....	23.9	20.7	32.7	17.6
Farm laborers .....	33.5	33.2	45.0	29.0
Military personnel .....	8.5	7.8	13.5	10.7

\*Based on a 10 per cent sample of 1959 live births. Only those groups with 1,000 births in sample are shown.

†Fewer than 50 births in sample; per cent not computed.

mothers, neonatal death rates increased rapidly with each birth (Chart 2). These mothers were more apt to have babies premature by weight than the average of mothers of all ages (9.0 per cent compared with 7.8 per cent). They were more likely to have late or no prenatal care (14.0 per cent compared with the average of 10.2 per cent of live births).

First-born children of mothers who had reached the mid-twenties had lowered survival chances. However, since previous live births (rather than number



of pregnancies) was the measure of birth order, some of these women may have had previous fetal losses, which was a factor associated with increased mortality risks for the present infant. It is of interest that in 1959 there were 17 mothers aged 45 or over who had had no previous live births; among the infants of this group there were no fetal deaths and all survived the first month.

High-order births (defined here as births to mothers with four or more previous live births) were associated with increased fetal and neonatal death rates. Like most of the study findings, the relationship between high-order births and mortality was not a simple one. In addition to the obvious association of high-order births with older mothers, there was also an association with Negro race, low-income occupation group (Table 5) and late or no prenatal care.

#### Multiple Births

Among live births, 2.0 per cent of whites, 2.8 per cent of Negro and 1.5 per cent of other non-white infants were one of a set of twins or triplets. Since more than half of these multiple births were premature (compared with 6.9 per cent of single births), the over-all risk of perinatal mortality was greater among these infants. However, for each 500-gram weight category between 1,000 and 2,750 grams, more infants of multiple births survive than do infants of single births of the same weight (Table 6).

TABLE 6.—Outcome of Births: Multiple\* and Single Births

Multiple, Single Births	Total Births (Live Births + Fetal Deaths)	Per Cent of Total Births		
		Fetal Death	Neonatal Death	Surviving Infant
All multiple births.....	7,773	3.6	9.1	87.3
Premature multiple births .....	4,123	5.6	16.1	78.3
All single births .....	355,339	1.3	1.5	97.2
Premature single births .....	24,346	10.5	15.5	74.0

\* One of a set of twins or triplets.

#### Father's Occupation Group

The incidence of premature births according to weight criterion increased with decrease in income level as measured by occupation of father (Table 7). The exception was infants of farm laborers; this may be due to the low prematurity rate found among Mexican-born mothers. Both nonfarm and farm labor groups had high neonatal and fetal death rates; the farm group had a particularly high fetal death rate. Infants of military personnel, whether the births occurred in federal hospitals or private hospitals, had a relatively high neonatal death rate.

#### Prenatal Care

Live birth and fetal death certificates give the month of pregnancy prenatal care began, but provide no information about type or continuity of

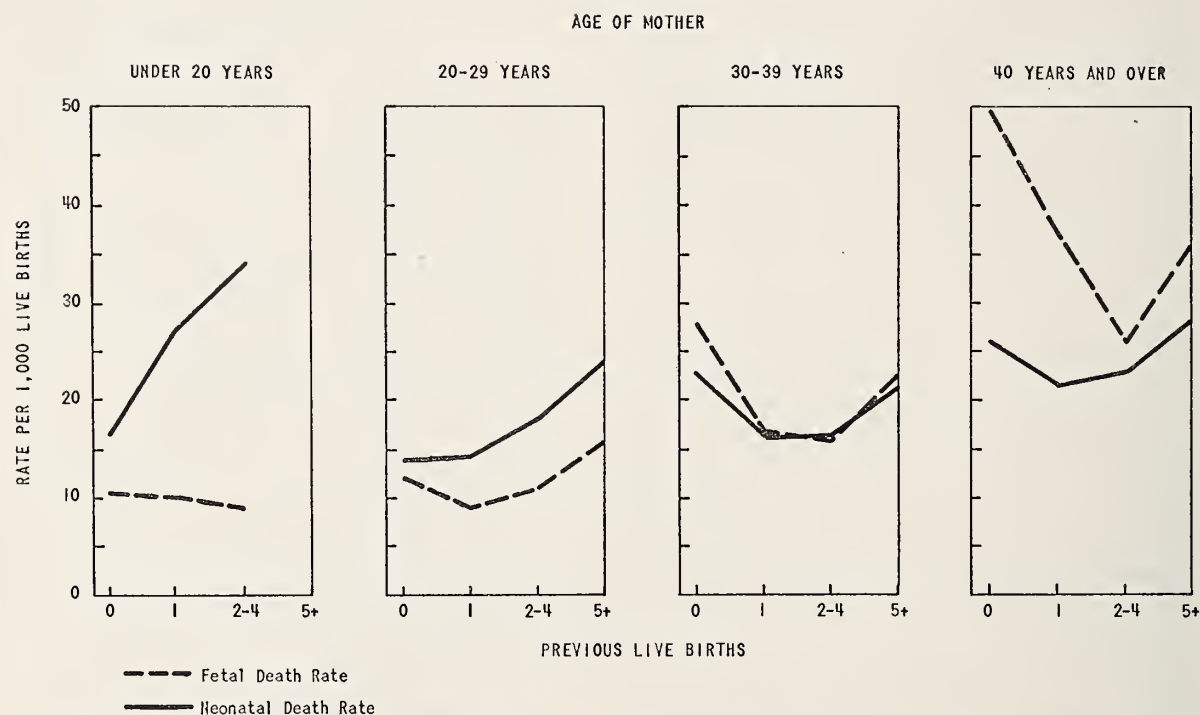


Chart 2.—Fetal and Neonatal Death Rates—Age of Mother and Previous Live Births (Deaths of Infants Born to California Residents During 1959).

TABLE 7.—Fetal and Neonatal Death Rates and Per Cent of Live Births Premature: Father's Occupation Group

Occupation Group	Fetal Deaths		Neonatal Deaths		Per Cent of Live Births 2,500 Grams or Less
	Rate*	S.E.†	Rate*	S.E.†	
Professional .....	9.5	.58	13.9	.70	5.1
Technical, administrative, managerial .....	11.0	.51	13.0	.56	5.9
Clerical, sales, skilled.....	12.4	.33	16.1	.38	6.8
Semiskilled .....	13.7	.45	18.8	.53	7.9
Nonfarm laborer .....	16.2	.66	19.1	.72	9.2
Farm laborer .....	20.2	1.30	19.6	1.28	6.6
Military personnel .....	12.4	.57	20.4	.73	8.0

\*Rate per 1,000 live births based on a 10 per cent sample of 1959 births. Only those occupation groups with 1,000 births in sample included.

†Standard error.

supervision. Accuracy of this item is often limited by the mother's memory or by medical care records covering only part of the pregnancy; this was one of the certificate items found to agree least often with hospital records for San Francisco births.<sup>1</sup> No information about month of first care was given for 1.9 per cent of 1959 live births, 16.4 per cent of fetal deaths.

In a 10 per cent sample of 1959 live births in California:

- Women delivered in private hospitals obtained prenatal care most often in the first trimester (69.9 per cent of white births, 51.6 per cent of Negro). For private hospital births, only 5.3 per cent of the mothers began care as late as the third trimester or failed to receive any care.

- Among county hospital births, 22.5 per cent of mothers had late care (third trimester) and an additional 15.9 per cent had no care before delivery.

- Women with four or more previous live births waited until the last three months (15.2 per cent) or had no care (6.3 per cent) more often than women with fewer previous births. (Delay by multiparae was found for private hospital births as well as others.)

- Of all age groups, mothers under 20 were most apt to have late care (10.8 per cent) or no care (3.2 per cent).

Table 8 shows outcome of births by the trimester in which the mothers began prenatal care. In order to make comparisons between births with prenatal care beginning early in pregnancy (first trimester) and those with care late in pregnancy (third trimester), data are presented separately for women whose pregnancies had reached the third trimester before delivery (26-36 weeks) or had reached term (37 weeks or more).

TABLE 8.—Outcome of Births: Weeks of Gestation and Trimester Prenatal Care Began

Weeks of Gestation and Trimester Prenatal Care Began	Total Births (Live Births + Fetal Deaths)	Per Cent of Total Births		
		Fetal Death	Neonatal Death	Surviving Infant
All Births .....	363,112*	1.3	1.7	97.0
First trimester .....	222,942	1.0	1.6	97.4
Second trimester .....	95,746	1.0	1.6	97.4
Third trimester .....	27,552	0.9	1.1	98.0
No prenatal care .....	9,267	4.3	5.4	90.3
Not stated .....	7,605	10.2	3.3	86.5
Births of 26-36 Weeks				
Gestation†	27,957	5.5	9.0	85.5
First trimester ..	15,626	5.2	9.5	85.3
Second trimester ..	8,127	4.2	8.9	87.0
Third trimester ..	2,188	3.0	4.8	92.2
No prenatal care ..	1,522	7.6	10.4	82.0
Not stated .....	494	40.5	8.5	51.0
Births of 37 or More Weeks Gestation ..	285,542	0.6	0.5	98.9
First trimester ..	180,250	0.5	0.5	99.0
Second trimester ..	76,302	0.5	0.6	98.9
Third trimester ..	21,617	0.6	0.6	98.8
No prenatal care ..	4,973	1.0	1.1	97.9
Not stated .....	2,400	9.2	0.9	89.9

\*Includes 49,613 births of less than 26 weeks gestation or with gestation not reported.

†26-36 weeks considered to be the third trimester of pregnancy.

TABLE 9.—Outcome of Births: Type of Hospital

Type of Hospital	Total Births (Live Births + Fetal Deaths)	Per Cent of Total Births		
		Fetal Death	Neonatal Death	Surviving Infant
ALL BIRTHS .....	363,112	1.3	1.7	97.0
All premature births....	28,469	9.8	15.6	74.6
County hospitals .....	45,623	2.0	2.4	95.6
Premature births .....	5,303	10.3	15.6	74.1
Federal hospitals .....	17,687	1.2	2.1	96.7
Premature births .....	1,529	8.5	18.8	72.7
Other tax-supported hospitals .....	32,992	1.2	1.5	97.3
Premature births .....	2,301	9.6	14.8	75.6
Private proprietary hospitals .....	202,174	1.1	1.5	97.4
Premature births .....	14,412	9.3	15.4	75.3
Private profit hospital ..	60,256	1.2	1.6	97.2
Premature births .....	4,345	9.9	14.9	75.3
Not in hospital .....	4,380	3.9	3.7	92.4
Premature births .....	579	18.1	21.1	60.8

For pregnancies of 37 weeks or more, infants of mothers with early care had slightly lower death rates and higher survival rates than those who had late prenatal care.

However, for infants born during the third trimester of pregnancy (26-36 weeks), death rates were lower for those whose mothers did not start care until the third trimester, with a necessarily short period of medical supervision. One possible explanation for the higher death rate found in the early care group is that those woman having complications seek medical care early in pregnancy, but still produce a high-risk group of infants because



of the complications. Another factor which might cause differences in rates is under-reporting of fetal deaths among women not under medical supervision.

Infants born to mothers with no prenatal care had high fetal and neonatal death rates whether pregnancy had reached term or not.

#### Type of Hospital

Mortality and survival data presented in Table 9 refer to hospital of birth rather than death. Some hospitals had few deaths because of their policy of transferring premature or ill infants for specialized care.

For infants born in county hospitals fetal and neonatal death rates were relatively high compared with private hospitals and other tax-supported hospitals except federal facilities. Births in county hospitals represented a concentration of "high-risk" groups of infants. In 1959, county hospital deliveries accounted for 12.5 per cent of all live births in California but they included:

- 50.8 per cent of all Negro births
- 79.9 per cent of all births with no prenatal care
- 27.2 per cent of all births to mothers with four or more previous live births
- 26.5 per cent of all births to families of semiskilled workers, farm and nonfarm laborers
- 18.5 per cent of premature births (2,500 grams or less)

Among premature infants of all races born in county hospitals, fetal death rates were higher, neonatal death rates the same as the state average. However, for white prematures born in county hospitals, both fetal and neonatal death rates were above the average rates of all white prematures. For Negro premature infants born in county hospitals, both fetal and neonatal death rates were similar to those for Negro prematures born in other types of hospitals.

Births in federal (mainly military) hospitals include a slightly higher than average proportion of prematures (8.6 per cent of 1959 total births, compared with the average 7.8). The neonatal death rate of these premature infants was the highest of all types of hospitals.

Of babies born outside a hospital, four out of 100 were born dead and another four died in the first month. Many of these may have been emergency deliveries; 13.2 per cent (almost twice the incidence for hospital births) weighed 2,500 grams or less.

#### Births by Cesarean Section

For 1959 live births, the incidence of cesarean section varied from 3.4 per cent in county hospitals to 5.0 per cent in private hospitals; 4.2 per cent of mothers under 35 years of age were delivered this way compared with 7.9 per cent of mothers 35 and over. Survival of infants delivered by section was

TABLE 10.—Outcome of Births: Cesarean Section and Other Delivery

Type of Delivery	Total Births (Live Births + Fetal Deaths)	Per Cent of Total Births		
		Fetal Death	Neonatal Death	Surviving Infant
All births by cesarean section .....	17,236	2.3	3.9	93.8
Premature births by cesarean section .....	2,171	8.0	20.2	71.8
All other delivery .....	345,876	1.3	1.6	97.1
Premature births by other delivery .....	26,302	9.9	15.2	74.9

TABLE 11.—Cause of Fetal Deaths

Cause of Fetal Deaths	Number	Per Cent	Rate per 1,000 Live Births
ALL CAUSES .....	4,724	100.0	13.2
Chronic disease in mother .....	170	3.6	0.5
Acute disease in mother .....	36	.8	0.1
Diseases and conditions of pregnancy and childbirth .....	333	7.0	0.9
Difficulties in labor .....	347	7.3	1.0
Other causes in mother .....	45	1.0	0.1
Placental and cord conditions..	2,078	44.0	5.8
Birth injury .....	47	1.0	0.1
Congenital malformation of fetus .....	305	6.5	0.8
Ill-defined causes .....	1,363	28.9	3.8

TABLE 12.—Cause of Neonatal Deaths

Cause of Neonatal Deaths	Number	Per Cent	Rate per 1,000 Live Births
ALL CAUSES .....	6,192	100.0	17.3
Congenital malformations .....	887	14.3	2.5
Birth injury .....	1,042	16.8	2.9
Atelectasis .....	1,570	25.4	4.4
Other diseases of early infancy	817	13.2	2.3
Prematurity unqualified or with subsidiary condition .....	1,301	21.0	3.6
Pneumonia of newborn .....	285	4.6	0.8
Other respiratory disease .....	15	.2	....
Diarrhea and gastritis .....	21	.3	0.1
Other infections .....	94	1.5	0.3
All other causes .....	160	2.6	0.4

\*Less than 0.1.

lower than for other infants at all birth weights up to 500 grams. (See Table 10.)

#### Cause of Death

The most frequently reported cause of fetal death in 1959 was placental or cord conditions (44.0 per cent of all deaths). In 28.9 per cent, the cause was ill-defined or unknown or was reported only as prematurity. Autopsy findings were used to establish cause of death in 27.5 per cent of the cases. However, even when autopsy findings were used, there was often no certainty about the exact cause. Weaknesses of the fetus from defective germ cells, deficiencies of the intra-uterine environment and the

hazards of change from intra-uterine to extra-uterine life present a complicated set of circumstances. Therefore, knowledge of the actual causes of fetal death is meager and medical certification and methods of classifying these causes are difficult.

The most frequently recorded cause of neonatal death in 1959 was atelectasis (25.4 per cent). About one-fifth of all deaths were attributed to prematurity with no further information. Autopsies were used more frequently (46.3 per cent) in establishing diagnosis than for fetal deaths. Most of the deaths occurred shortly after birth—70.0 per cent in the first two days, 21.5 per cent between two days and one week and 8.5 per cent in the following three weeks.

Cause of perinatal deaths was analyzed for age of mother, previous live births, race, occupation group and type of delivery. No important differences were found. (See Tables 11 and 12.)

#### Geographic Area

Except for higher than average neonatal death rates in the northern mountain counties, there appeared to be no consistent urban-rural differences when five-year average (1955-1959) perinatal death rates were studied. Some major metropolitan counties had higher rates than counties surrounding them. There appeared to be little association between fetal and neonatal death rates in individual counties. Some areas with high neonatal rates had low fetal death rates.

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# Cancer of the Ovary

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IN 1843, DEWEES WROTE: "The time may arrive, when we will be in possession of a substance, the action of which shall be confined to the ovaries alone . . . but until then, unfortunately, the victims must remain content with the solace which palliatives afford. Unfortunately, they have much more frequently furnished subjects for the anatomist's knife than triumphs for the physician's skill."

The search for this "substance" with which the poor prognosis of ovarian cancer can be improved continues as one of the most frustrating and important challenges. Whereas new methods of diagnosis, improved surgical and radiologic modalities and extensive doctor-laity education programs have improved the survival rates for patients with uterine cancer, overall five-year survival rate for ovarian cancer has remained at a bleak 20 per cent for the past 35 years.

The wide diversity in the biologic behavior of ovarian enlargements, their inaccessibility and the absence of prodromal signs demand pertinacious awareness of the possible presence of such lesions in every woman.

According to the reported statistics, the incidence of deaths from ovarian cancer has increased twofold in the past 30 years. Accounting for less than 4 per cent of all cancers in the female, it causes 16 per cent of all the deaths from all types of cancer in women.

### TYPES

The triple embryologic origin, the complex anatomy and the incompletely understood intricate physiologic activity of the ovaries seem to labor in unpredictable unison to thwart continued efforts to bring forth an acceptable system of classification of carcinoma of the ovaries.

Following are brief descriptions of the more common ovarian tumors (and neoplasms).

#### Simple Cysts

The benign or physiologic tumors, usually of follicular or corpus luteum origin, constitute a large portion of all ovarian enlargements. Occurring mostly during the reproductive years, occasionally

causing pain and abnormal bleeding, the majority will regress in time. However, if the cyst persists or shows signs of progressive growth, exploration may be indicated. Small cysts (one or two centimeters in diameter) are normal for an active functioning ovary and the common practice of "needling," "aspirating," or "excision" is both unwarranted and meddlesome.

#### Endometriosis

Although the incidence of malignant changes in endometriomas is rare, the pseudomalignant changes may be such as to closely simulate pelvic cancer. Hormonal palliative therapy has been valuable in some cases.

Decision between conservative operation with preservation of the possibility of conception, and radical operation that entails the removal of this hope, is a matter for conscientious analysis in each case. However, so-called conservatism can become radical in scope when injudiciously performed.

#### Fibromas

For the most part ovarian fibromas are small and asymptomatic. If large they may cause pain due to pressure, necrosis or torsion of the pedicle. Abdominal ascites may lead to the misdiagnosis of an inoperable malignant lesion. Ascites, hydrothorax and an ovarian fibroma form the original triad of the Meigs' syndrome.

#### Teratomas

A cystic teratoma or dermoid cyst may occur in any age group but is more common in the fourth and fifth decades. In the author's experience these lesions are bilateral in 8 per cent of cases; other observers report both sides affected in as many as 25 per cent, incidence of malignant changes is low. Often these lesions lie in front of the uterus and they are occasionally visualized in roentgenograms. In some cases it is possible to enucleate the tumor portion, leaving an active although occasionally very thin strip of ovarian tissue. The contralateral ovary should be carefully examined for a possible small "oil"-containing nidus.

The solid teratoma is highly malignant. It is relatively rare and occurs mostly in the younger age group. In our very limited experience, radical ex-

To appear as part of the revised Cancer Studies.

cision, chemotherapy and radiation have been of little value. However some investigators report five-year survival of as many as 25 per cent of patients.

#### Cystadenomas

Comprising the largest group of ovarian neoplasms, the benign and the malignant counterparts of the serous and mucinous types of cystadenomas present frequent problems of both diagnosis and treatment. Occurring mostly in the 40-60 year age group they can reach tremendous size before causing symptoms other than an abdominal enlargement. The gross and microscopic findings may present a paradox in diagnosis. Whereas the gross appearance is that of a malignant lesion, microscopically it may be benign, and vice versa. At times the experienced pathologist is unable to make an unequivocal diagnosis.

Ascites is common but not pathognomonic of malignant disease. Since 1949 the practice of examining the ascitic fluid, especially in the presence of encapsulated growths, has been worth the added effort. Attempting to make the diagnosis by abdominal paracentesis is rarely advisable.

#### Primary Solid Carcinomas

This group consists of ovarian cancers of the undifferentiated type, most of which are probably atypical serous or mucinous cystadenocarcinomas. However the undifferentiation is often so pronounced as to offer no clue to origin of the tumor. Ascites and bilateralism are high. Symptoms are minimal and often misleading until the disease is well advanced.

#### Secondary Carcinoma

More common than the primary type, secondary carcinomas represent metastasis from the uterus, gastrointestinal tract, breast, adrenal, thyroid or parotid gland. The classical example of secondary ovarian cancer is the Krukenberg tumor. The primary lesion may be small, asymptomatic and most frequently located in the stomach. Usually the tumor masses are bilateral and firm, and they maintain, in various degrees, the form of the ovary.

#### Special Tumors

*Granulosa Cell Tumor*—Usually unilateral, occurring in any age group and presenting symptoms and signs consistent with continuous female sex hormone activity. The reported incidence of malignant change varies from 18 to 30 per cent. Recurrences have been reported as much as 17 years after the original operation. In the author's experience this tumor is not associated with an increase in incidence of endometrial cancer.

*Theca Cell Tumor*—Closely related to the granulosa cell tumor, appearing mostly in menopausal

and postmenopausal groups, and rarely malignant. In 7 per cent of cases observed by the author the lesions were bilateral, with evidence of female sex hormone activity in about half the cases.

*Dysgerminoma*—Relatively rare and for the most part occurring between the decades of 10 and 30 years. Although these lesions are reported as being associated with sexual immaturity or pseudohermaphroditism, half our small series of cases occurred in ostensibly normal women. In 25 per cent of cases the lesions were bilateral, the incidence of malignant change apparently 40 per cent, with a high recurrence rate. This tumor is highly radio-sensitive.

*Brenner Tumor*. Occurring most frequently in the postmenopausal group and associated with mucinous cystadenomas in 30 per cent of cases observed by the author, the Brenner tumor is often an incidental finding. Few undergo malignant change—probably less than 2 per cent.

*Masculinizing Tumors*. The arrhenoblastomas, "adrenal rest tumors" and the "hilar cell tumors," are grouped together because of their rarity and their clinical manifestations. The reported incidence of malignant change varies from low to moderate.

#### SYMPTOMS

Ovarian cancer is an insidious and unpredictable disease that seldom produces symptoms until it is beyond the point of cure. Unfortunately, in the early stage when eradication is possible there is nothing pathognomonic in either the history or the pelvic findings that will distinguish the benign from the malignant types. An unswerving alertness that every woman, regardless of age or complaint, may harbor an ovarian tumor is the greatest reason for a periodic pelvic examination.

The two cardinal signs of ovarian cancer are enlargement of the abdomen and pain. Many patients are unaware of the tumor until its presence is heralded by a noticeable enlargement of the abdomen or a tumor mass is palpable. Pain, especially when localized in the lower pelvis, is often indicative of malignant and probably inoperable disease.

Pain and menstrual disturbances are common in the presence of the so-called physiological cysts, whereas signs of abnormal hormonal activity characterize the "functional" tumors.

#### DIAGNOSIS

A good understanding of the diversified characteristics of ovarian enlargements is necessary in the diagnosis of ovarian cancer. Each type tends to exhibit trends in bilateralism, age groups and growth patterns. The "physiologic cyst" is never solid,



seldom occurs in the postmenopausal woman, seldom reaches a size of more than 10 cm in diameter, and when less than 10 cm in diameter usually regresses completely after one or more menstrual periods.

The probability of malignant disease is increased when the cyst wall feels thick; when, except for the dermoid type, the tumor feels both cystic and solid; when the tumor contour is nodular or lobulated; when, except for the fibroma, the tumor is smooth and solid; and when, except in the presence of possible endometriosis or inflammatory disease, there are palpable signs of fixation. Ascites and hydrothorax are strongly suggestive of malignant neoplasm, although these conditions may also occur with benign ovarian tumors.

An accurate history and a thorough examination are mandatory for differential diagnosis. Fullness of the bladder or the rectum may interfere with the recognition of a tumor of small size or distort the palpable findings. Nor is it uncommon to mistake pelvic endometriosis, diverticulitis or carcinoma of the sigmoid, myomas, old pelvic inflammatory masses, ptotic kidneys or secondary metastatic ovarian cancer for primary ovarian cancer. In cases of suspected ovarian malignant disease, a plain film of the abdomen, pyelograms, sigmoidoscopy and studies with a barium enema are invaluable. In some instances examination under anesthesia—and, in selected cases, culdoscopy—may provide the final diagnosis. Attempting diagnosis by abdominal paracentesis is usually not advisable.

#### TREATMENT

Basically, the treatment of ovarian cancer is surgical excision, and in view of the high incidence of bilateral involvement this should, when possible, include the uterus, the tubes and the ovaries. Even though the disease may seem advanced and inoperable, in almost all cases the possible benefits of a definitive diagnosis (that can only be made by surgical means) warrant the operation. The surgical management includes:

1. Unilateral oophorectomy when the lesion affects one ovary, has a low malignancy rating, is of a kind that is associated with a low incidence of bilateral involvement and conservation of ovarian activity is desired.

2. Removal of the uterus, both tubes and ovaries when both ovaries are involved or when the growth is unilateral with limited capsular breakthrough.

3. Removal of as much as possible of the resectable tumor masses when the disease involves contiguous organs. Removal of tumor bulk frequently adds to the postoperative comfort and theoretically permits better response to planned palliative therapy.

4. Biopsy of the tumor mass for definitive diagnosis if the tumor is inoperable or the patient could not endure the procedure. The proper use of irradiation therapy in this group has occasionally resulted in tumor regression and patient improvement, permitting a second operation.

Decision as to the scope of therapy must be based on the physician's knowledge of ovarian pathology, assistance from the attending pathologist, the extent and type of disease and the age of the patient. The vagaries of ovarian tumors and neoplasms are not generally as well understood as they ought to be.

#### Adjuvant Modalities

*Irradiation therapy.* The value of radiotherapy continues a controversial subject. Excellent response does sometimes occur, but whether the occasional good result outweighs the occasional increase in patient discomfort remains unanswered. When the disease is grossly localized or the peritoneal fluid or washings contain clumps of cancer cells, properly applied radiotherapy appears to have some palliative value.

*Radioactive isotopes.* The routine instillation of either radioactive gold or phosphorus, at operation, has been discontinued.

*Chemotherapeutic agents.* New methods of cancer control often are tried on cancer of the female genital tract. To date, clinical experience with chlorambucil (Leukeran®), triethylene thiophosphoramide (Thio-TEPA), cyclophosphamide (Cytosan®), triethylene melamine (TEM), 5-fluorouracil (5-FU), and nitrogen mustard has been exciting, interesting, but certainly not conclusive. Approximately 50 per cent of patients treated with these agents had various degrees of objective improvement, 25 per cent had no apparent response and 25 per cent were definitely made worse. Often control of recurrent ascites is obtained by intraperitoneal instillation of Thio-TEPA or nitrogen mustard. These potent compounds are not without danger and should be used only by physicians experienced in cancer chemotherapy.

#### PROGNOSIS

Whereas the overall reported cure rate for ovarian cancer is low, the rate varies greatly with the type of neoplasm. Unfortunately, in the language of most reports all ovarian tumors are dealt with as a single group. It would be helpful to have more information on the natural history and the cure rate for each type of ovarian cancer. Also, since the best statistics emanate from medical centers, the overall country-wide management is not adequately reflected.

In all cases, even though all involved tissue apparently is excised, the prognosis should always be guarded. Why supposedly low grade malignant

ovarian tumors recur and the high grade malignant lesions temporarily regress, is unexplainable. Also, it must be borne in mind that ovarian neoplasms sometimes recur many years after operation.

Two important factors influence prognosis. First, removal of the lesion in its early or eradicable stage. This presupposes careful periodic pelvic examination, a routine not commonly advocated or followed by the profession and frequently unheeded by the patient. Too much emphasis has been placed on the

value of routine vaginal cytologic examinations and too little on the importance of a periodic pelvic examination. Second, appreciation by the physician of the significance of variations in the consistency and size of the ovary. He must not hesitate to seek definitive information by an exploratory laparotomy when the diagnosis is in doubt, and he must have a fundamental understanding of the principal types of ovarian tumors and neoplasms.

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# **Carcinoma of the Endometrium**

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THE INCIDENCE of carcinoma of the endometrium has increased in recent years, possibly because more women live to old age. The average age of onset is 57 years and the vast majority of the lesions occur in women between 45 and 60 years. The ratio of cervical cancer to endometrial cancer varies with the age of the patient and has been reported as 6 to 1 in the premenopausal years, a 1 to 3 ratio after age 70, 4 to 1 before age 40, and 1 to 1 after age 55.

### **Etiological Considerations**

The cause of endometrial cancer is unknown although there is much evidence for an endocrine and/or metabolic factor. It is said that endometrial cancer is associated in a disproportionately large number of patients with obesity, hypertension and diabetes mellitus, although recently this has been disputed.

The evidence for and against some form of endocrine disturbance is as follows:

1. A history of infertility is more common than is usual for normal women who have attained this age.

2. A history suggestive of prolonged or unopposed estrinism or a hyperestrogenic state is more common than normally expected:

- a. There have been numerous reports of a preceding menorrhagia or an established endometrial hyperplasia.

- b. A large number of case reports have been published of the development of endometrial cancer after long continued administration of an estrogen.

- c. Relationship between estrogen producing tumors of the ovary and endometrial cancer has been recognized by most authorities. In a study of 75 feminizing mesenchymal tumors of the ovary, 15 per cent were found to be associated with endometrial cancer.

- d. Hyperplasia of the ovarian stroma is relatively common in cases of endometrial cancer. It is thought that this might possibly be an indicator of excessive estrogen production. On the contrary, other investigators have found no significant differ-

ence in the ovaries of women with endometrial cancer.

- e. Investigators have produced carcinoma of the endometrium with large doses of estrogen in rabbits.

3. Hyperplasia of hilar cells of the ovary has been reported in 81.9 per cent of 133 patients with endometrial cancer as compared with 16.3 per cent of 86 normal postmenopausal women. An increase in the amount of luteinizing hormone was also demonstrated in these patients, and the increase disappeared when the ovaries were removed.

4. There is an unduly high incidence of carcinoma of the endometrium in women who have sclerocystic ovaries. Of 43 cases of the Stein-Levinthal syndrome, 16 were associated with endometrial cancer.

5. Recently it has been found that progesterone and its analogs have a profound effect upon endometrial cancer, causing it to degenerate and temporarily disappear in many cases.

Radium has been incriminated as an etiological agent when cancer of the endometrium has followed its use in the treatment of endometrial hyperplasia, but the evidence is inconclusive.

Adenomatous hyperplasia of the endometrium, a possible extension of the ordinary glandulo-cystic hyperplasia, may be the result of prolonged estrinism and may occupy an intermediate position between hyperplasia and cancer.

### **Pathological Considerations**

The growth may start in a small area of the endometrium and continue to be localized for a long time. This fact has practical clinical significance. The malignant changes may be diffuse and may remain superficial, or the changes may be found in an endometrial polyp. This neoplasm tends to remain in the corpus, leaving the cervix free. Usually the growth proceeds slowly, so that the symptoms often extend over a period of years. Sooner or later there is invasion of the muscular wall of the uterus, and eventually penetration into surrounding structures. In most instances the tumor does not attain a great bulk and there is only moderate enlargement of the uterus, if any.

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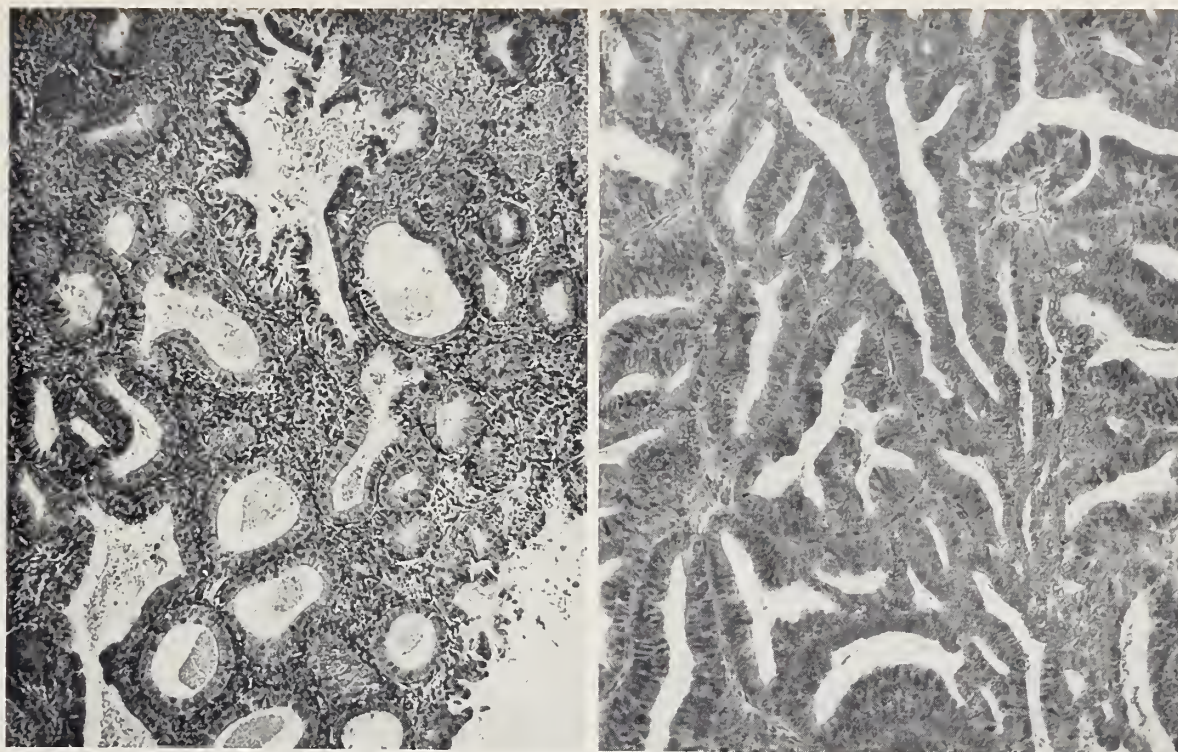


Figure 1.—*Left*, Atypical hyperplasia of the endometrium; *Right*, Well differentiated carcinoma of the endometrium. ( $\times 147$ )

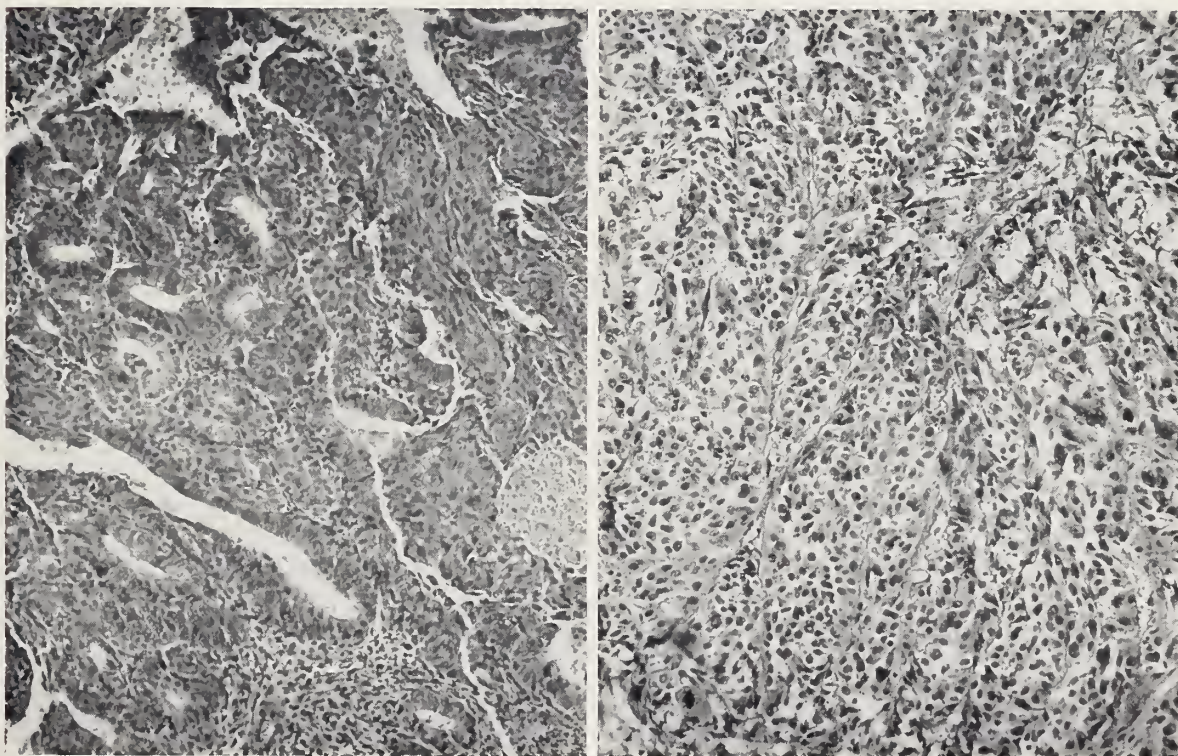


Figure 2.—*Left*, Typical adenocarcinoma of the endometrium of medium differentiation; *Right*, Undifferentiated, anaplastic carcinoma of the endometrium. ( $\times 147$ )



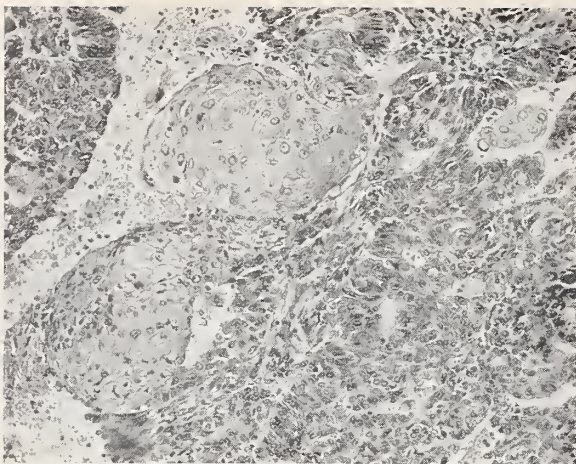


Figure 3.—Adenocanthoma of the endometrium. ( $\times 147$ )

Invasion of the circulating blood is not uncommon; it has been demonstrated to occur in showers at the time of diagnostic curettage. This may result in widespread dissemination. On the other hand there may be no demonstrable metastasis. Spread by way of lymphatic channels is also common. Most often the lymphatic chain of the fundal portion of the uterus is involved—that is, the channels proceeding along the oviducts to the ovaries, and eventually to the aortic nodes. Involvement of the ovaries has been reported in from 2 per cent to 12 per cent of cases. When the growth occupies the lower part of the endometrial cavity, there may be lymphatic spread to the obturator and iliac nodes, as in the case of cervical cancer.

Frequently metastasis occurs in the lymphatic channels of the vaginal vault, and suburethrally near the meatus.

Microscopically, the features are those of adenocarcinoma. While there is pronounced variation in the degree of differentiation, only a small number are anaplastic. Usually the cell type and glandular pattern are characteristic and identifiable (Figure 1). The well differentiated growths are scarcely different from atypical hyperplasia and have been referred to in the past as adenoma malignum. At the other end of the scale, the glandular pattern may be lost, and one may see only masses of round and oval cells with hyperchromatic, irregular nuclei lying in a scanty stroma. Between these extremes are glandular patterns of varying complexity (Figure 2). Occasionally one finds epidermoid changes, usually in a patchy fashion, probably representing an aberration in differentiation. This is referred to as adenoacanthoma (Figure 3). Such growths are neither more nor less malignant than the cancers with similar patterns but without the acanthomatous changes.

Unlike cervical cancer, the microscopic characteristics of the growth have a decided bearing upon the prognosis. The well differentiated growths are associated with a favorable outlook while the reverse is true of the anaplastic growths, no matter what the method of treatment.

Invasion of the muscular wall of the uterus is found in the form of nests of typical adenocarcinoma, the deeper the invasion the worse the prognosis.

#### Diagnosis

A positive diagnosis of endometrial cancer can be made only by obtaining histologically characteristic tissue by curettage of the uterine cavity. The possibility of the disease is usually suggested by intermenstrual bleeding in premenopausal women and by postmenopausal bleeding in older women. Generally the amount of bleeding is small and occurs intermittently. The discharge may be serous or watery. Rarely menorrhagia alone is the presenting symptom. Occasionally there is a seropurulent discharge associated with cervical stenosis and pyometra. The uterus is often normal in size. In elderly women it may be smaller than normal or moderately and symmetrically enlarged. In most instances the uterus is freely movable although in occasional advanced cases it is fixed on one or both sides by cancerous infiltration. Suburethral metastatic nodules may be identified in some cases. The pelvic findings on clinical examination are not significant except that they may eliminate other causes of bleeding. A myomatous uterus is often impossible to differentiate by pelvic examination.

Vaginal smear examination is not an efficient screening device in the case of endometrial cancer. (It correctly indicated cancer in the uterine cavity in less than 50 per cent of cases observed by the author.) Thus a positive smear has significance but a negative smear does not. The problem is to obtain a better specimen of material for smearing. Aspiration techniques have been described which resulted in material which gave a 90 per cent indication when cancer was present. Techniques involving lavage of the endometrial cavity with sterile normal saline solution brought similar results. More recently a brush technique has been devised which also permitted a correct diagnosis in roughly 90 per cent of the patients. Such diagnostic measures have not proven harmful although all of them involve the introduction of a foreign substance into the uterus. In individual cases of intermittent or irregular bleeding or postmenopausal bleeding, such tests can be useful and often reassure one regarding the propriety of deferring hospitalization and uterine curettage. It must be fully appreciated, however,

that should the bleeding continue or recur, even in the face of a negative smear, curettage is obligatory. Some physicians use a small curette for office endometrial biopsy in cases in which there are suspicious symptoms. With this procedure a negative result should not be relied on too heavily. A small tumor could be missed quite easily. If curettage is to be performed, anesthesia, dilatation of the cervix and thorough exploration would seem to be preferable.

Staging

The simplest and most acceptable classification of the stages of advancement of the growths is that adopted in the Annual Report on the Results of Treatment in Carcinoma of the Uterus, edited by H. L. Kottmeier of Stockholm.

STAGE 0: Most likely to be carcinoma, although it is impossible to arrive at a definitive microscopic diagnosis.

STAGE I: The growth is confined to the uterus, which is freely movable.

Group 1. Good operative risk. Operation advisable.

Group 2. Bad operative risk. Anatomically the growth is confined to the uterus but general conditions, such as old age, obesity or complicating diseases such as diabetes or cardiovascular disease, contraindicate operation.

STAGE II: The growth has spread outside of the uterus.

The incidence of the various stages of advancement reported in the last volume (Vol. 12) of the Annual Report was:

	Number	Per Cent
Stage I, Group 1.....	9,517	57.1
Stage I, Group 2.....	4,911	29.5
Stage II .....	2,237	13.4
	16,665	100

At UCLA there have been fewer Stage II cases.

Therapeutic Considerations

The most widely accepted treatment is total hysterectomy, including a 2 centimeter vaginal cuff and bilateral salpingo-oophorectomy. Many authorities believe that preoperative radiation with either radium or external high energy radiation (super voltage x-ray, Cobalt 60, or the linear accelerator) is desirable. A few authorities choose postoperative external radiation therapy, whenever the growth is more than superficial, and in a few large clinics, mostly in the Scandinavian countries, treatment is confined to radiation, hysterectomy being reserved for cases in which signs of recurrence appear (15.1 per cent at the Radiumhemmet in Stockholm). Finally, a considerable group of observers, in the

TABLE 1.—Incidence of Node Metastasis at Operation in Cases of Endometrial Carcinoma

Author	Percentage of Cases with Node Metastasis
Brunschwig .....	17
Javert .....	28
Meigs .....	23
Stallworthy .....	10
Townsend .....	20
Winterton .....	6

United States and Great Britain especially, employ operation whenever possible, resorting to radiation only when the growth is inoperable. A small group of operators espouse a radical operation of the Wertheim type.

The rationale of preoperative radiation is that it causes shrinkage of the growth and seals off lymphatic vessels by causing fibrous tissue deposition sufficient to obliterate them, thus making operation safer. The most popular radiation technique involves the packing of the uterine cavity with as many 10 mg capsules of radium as it will accommodate, in order to insure uniform exposure. It is considered important to radiate the vaginal vault also in order to minimize the chance of recurrence in the lymphatic channels of this area, a not uncommon event. The radium is left in place long enough to provide a cancerocidal dose, not always easy to calculate because of the variability in the way the capsules are distributed and the differences in tolerance between growths. Usually operation is then deferred for six weeks after radiation in order to allow the necrotic tumor to slough, infection to subside and healing to occur. In recent years some authorities have operated sooner, perhaps within a week after the radium insertion, with the thought that the longer interval might allow time for some of the damaged but still viable cancer cells to recover and spread. The opposing viewpoint is that early operation vitiates the advantages of radiation mentioned above, and perhaps increases the likelihood of infection.

Intrauterine radium application is contraindicated when the uterus is retroverted and cannot be straightened, because of the danger of radiation injury to the rectum, which might cause severe obstruction and even make colostomy necessary.

Theoretically, preoperative external radiation therapy encompassing the entire pelvic area would seem to be superior to local intrauterine radium, for the broader treatment carries with it the possibility of destroying areas of spread outside of the uterus. However, results with this method have not been superior to those obtained with radium.

Postoperative external radiation therapy is indicated in cases in which deep penetration of the wall



TABLE 2.—Results of Treatment of Carcinoma of the Endometrium  
—At 5 Years

36 Collaborators—Material Dates Back to 1915		
Alive with no evidence of disease.....	9,679	58.1%
Alive with cancer.....	340	2.0
Died of cancer.....	5,201	31.2
Lost sight of.....	282	1.7
Died of intercurrent disease.....	1,163	7.0
From Annual Report, Vol. 12.	16,665	100.0

of the uterus by the cancer has been demonstrated histologically, or in which pelvic metastasis has been noted.

The results of radiation alone, as reported by Scandinavian investigators, are remarkably good, indeed, even superior. For example, the overall five-year survival rate reported from the Radiumhemmet is 64 per cent, while the overall result reported in Kottmeier's Annual Report on the results of treatment for all methods of treatment is 61.6 per cent. Even so, Kottmeier, who is the present chief of the Radiumhemmet Gynecologic Service, recently reported that his policy has been shifted to more or less routine hysterectomy following radiation.

The majority of surgeons perform a "simple" total hysterectomy. Undue manipulation or squeezing of the uterus is avoided in order to minimize the chance of forcing cancer cells into blood and lymph channels. Some observers advise sewing the lips of the cervix together before opening the abdomen, and tying off the ends of the oviducts immediately upon exposing the uterus. The plane of dissection of the cervix and vaginal vault is kept outside the enveloping fascia in order to avoid the possibility of cutting through involved lymphatic vessels. It is considered advisable to remove about 2 cm of vaginal vault where recurrences may develop in a small proportion of the cases.

A radical operation, including regional node resection has been advised and practiced by a few surgeons (see discussion under *Results* in following paragraphs). Regional nodes have been found involved by metastasis in approximately 20 per cent of the patients operated upon (Table 1). However, since patients with endometrial cancer are often older and are not always good operative risks, many gynecologists believe that the routine employment of radical operation may risk rather than save more lives.

Data available in the literature do not reveal a superiority of any one program for treatment. For a small lesion in an unenlarged, freely movable uterus, immediate total hysterectomy with vaginal cuff and bilateral salpingo-oophorectomy seems logical, and certainly it is more expeditious than radiation therapy and then operation. For bulky growths

TABLE 3.—Relative Apparent 5-Year Recovery Rate Related to Stages of Disease

Stage	Patients	Alive	Recovery Rate
I, Group 1.....	9,517	6,957	73.1
I, Group 2.....	4,911	2,234	45.5
II .....	2,237	488	21.8
	16,665	9,679	58.1
From Annual Report, Vol. 12.			

TABLE 4.—Comparison of Five-Year Results of Different Treatments\*

	Stages I and II	Stage I Group 1
All or predominantly radiation† (8 clinics) .....	54.3%	72.4%
All or predominantly surgical (12 clinics) .....	59.9	72.9
Predominantly radiation followed by hysterectomy (7 clinics) .....	56.8	73.1
* Calculations based on figures from the Annual Report, Vol. 12, Stockholm 1960. † In 8 per cent of 4,788 cases primarily radiated, hysterectomy was performed for failure.		

in an enlarged uterus, preoperative radium (uterine cavity, cervix and vaginal fornices) would seem to offer the advantages of shrinkage of the growth with diminution in the likelihood of causing dissemination by the manipulations incident to hysterectomy. Radiation alone could well be the treatment of choice for Stage I, Group 2, and Stage II cases. Radium is contraindicated when the uterus is retroverted, for fear of over-radiating the rectum; it is also contraindicated when the uterus has been perforated. Whenever the tumor has penetrated half way or more into the uterine wall or there is other spread beyond the uterus, postoperative external radiation therapy is indicated.

## Results

The overall results of treatment of all kinds of more than 16,000 cases reported is a five-year survival rate of 58.1 per cent (Table 2). When only more recent cases are considered, the figure is 61.6 per cent. Table 3 shows the results for lesions of various stages. The five-year survival rate for the most favorable cases (other than Stage 0) is 73.1 per cent.

In Table 4, data from the *Annual Report* have been arranged for the purpose of making certain comparisons. It is seen that there is no difference in the five-year results whether the primary method of treatment is predominantly radiation, predominantly surgical, or is radiation followed by hysterectomy. In Table 5 are recorded results published in the recent literature; they show that some individual results are very good indeed, especially if hysterectomy is a part of the treatment. The data reported

TABLE 5.—Results of Treatment of Endometrial Adenocarcinoma—From the Literature of the Last Several Years  
(Per Cent Five-Year Survival)

Author		Radiation Only, Stage I, Group 1	Preop. Radiation and Hysterectomy	Hysterectomy Only	Vaginal Hysterectomy	Surgery and Post-Op. Radiation	Radical Surgery	Over- All
Phillip and Rumphorst....	'56	33.4†	.....	66.6	.....	.....	.....	.....
Randall and Goddard ....	'56	.....	75.7	.....	.....	.....	.....	55.2
McLennan .....	'58	.....	89.0	94.5	.....	.....	.....	.....
Schmitz .....	'59	.....	81.6	.....	.....	.....	.....	.....
Parsons .....	'59	.....	.....	.....	.....	.....	78	.....
Brunschwig .....	'57	.....	.....	.....	.....	.....	73	.....
Cron .....	.....	.....	82.0‡	71.0§	.....	.....	.....	.....
Wetterdal .....	'59	.....	.....	93.0	.....	80.0	.....	.....
Philpott .....	.....	52.9†	.....	69.0	.....	.....	.....	.....
Miller .....	'60	.....	86.0	.....	.....	.....	.....	37.5
Montgomery .....	'60	.....	.....	.....	.....	.....	.....	65.0
Soergel .....	'61	50.0†	.....	66.6	82.5	.....	.....	.....
Stroup .....	'59	.....	.....	79.0	.....	.....	.....	.....
Nielsen (Copenhagen)*..	'59	65.2	.....	.....	.....	.....	.....	45.0
Gorton (Lund)* .....	'59	77.2	.....	.....	.....	.....	.....	64.7
Greene (London)* .....	'59	75.4	.....	.....	.....	.....	.....	45.2
Kottmeier (Stockholm)*	'59	79.2	.....	.....	.....	.....	.....	63.9
Mintz .....	'56	.....	62.5	76.5	.....	66.6	.....	.....

\*From Annual Report—Vol. 12. The figures for Stage I, Group 1 are given for the sake of comparison with figures for operative treatment, presumably also for Stage I, Group 1 cases.

† (? Stage) ‡ (4 Series) § (5 Series)

show five-year survival ranging from 80 to 94 per cent.

As in the case of all cancers early diagnosis is of paramount importance. The results of treatment of the disease when it is confined to the uterus are excellent. Currently there is no reliable method of screening for endometrial cancer, but prompt attention to symptoms would result in earlier diagnosis in a much larger proportion of the cases.

#### New Considerations

Since cytologic examination of a vaginal smear is not dependable for endometrial carcinoma it has been suggested that for all women who have irregular bleeding at about the time of the menopause, or who are having post-menopausal bleeding, or who have a history of endometrial hyperplasia, the additional procedure of aspiration or lavage of the uterine cavity should be carried out. This is an excellent suggestion and should become routine.

A most interesting recent development in manage-

ment is that of the use of progesterone (or its analogs) in doses sufficient to produce a pronounced secretory or pseudodecidual reaction. Doses ranging from 100 to 1,000 mg per day have been reported. Several different investigators have administered progesterone to women with recurrent or metastatic endometrial carcinoma and have noted decided recession of the growths in from a third to one half of the cases. Some of the recessions have been short-lived, others have lasted for several years. The mechanism of action is not known but some relationship to the specific hormonal effects is suspected.

Adrenalectomy in endometrial carcinoma has resulted in temporary improvement only. This observation suggests that removal of all sources of estrogen might be important in this disease.

Chemotherapy with a variety of agents, by mouth, by injection and by pelvic area perfusion has also been tried, without demonstrable accomplishment.

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## CLINICAL NOTES

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### Role of the Private Physician in Coordinated Home Care

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GROWING INTEREST in coordinated home care has developed in recognition of its potential role as that part of a total medical care plan which can best meet the needs of certain patients or of given patients in certain phases of their illnesses. As a tool of the physician in the management of his patient, the application and value of a home care program are considerably different in today's practice of medicine than when it was first introduced in 1796. But, just as we have rediscovered the value of certain drugs used long ago, so are we now recognizing the basic advantages of home care programs. New York's Montefiore Hospital's program in 1947 viewed home care as "a productive means of collaboration that draws on all elements of the medical society for helpful service in a sphere of activity that belongs to the rank and file of physicians who engage in the private practice of medicine." This concept refined the application of the technique of home care and delineated the role of the physician.

Why should we, as physicians, be interested in a coordinated home care program? Experience has amply demonstrated that:

1. As a rule, the disabled and ill are happier, get well faster, and their dignity is preserved when at home in familiar surroundings.

2. Home care generally is less expensive than hospitalization.

3. In many areas shortages of hospital beds will become more acute in the decades ahead because of the population explosion and geographic shifts in the population. For example, California, in December, 1962, became the most populous state in the Union. Under conditions such as these, it has been asserted that we may never "catch up" on hospital beds. *Acceptance* and *expansion* of the home care program obviously would free hospital beds for the acutely or critically ill.

4. It is conceivable that, in other areas, this same program might eliminate the need for construction of additional hospital facilities.

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5. Coordinated home care is a methodology whereby it might be possible to brake the trend of spiraling costs of health insurance. Earlier dismissal of hospitalized patients might be encouraged by referring them to a home care program when the situation so indicates. Simultaneously, those patients whose illnesses required certain medical services, but not hospitalization, could receive their care at home. If the stay in the hospital of one patient in 20 was shortened by only one day—at a daily cost of \$35—the total hospital cost to the American people could be reduced by almost \$50 million. This would be offset to some extent by a much lower expenditure for home care programs. A saving of such magnitude possibly could stabilize or lower health insurance premiums—a most welcome reversal for the overtaxed American citizen, whether he is an employer who directly assumes these costs or the employee who directly pays the cost as a member of the public. Such a development would be a telling blow against programs of compulsory health insurance.

6. With the availability of such a program, examples of medical conditions for which patients would no longer need hospitalization might be bursitis, arthritis, most muscular problems, certain fractures, cardiovascular accidents (strokes), certain cardiac and hypertensive situations, hepatitis, and many pulmonary problems. However, it must be stressed over and over again that coordinated home care is a *supplement* and *not a substitute* for existing medical care patterns. In other words, an acutely ill patient, or one needing constant supervision, should be hospitalized.

7. The innovation begun during World War II, as mentioned previously, of earlier discharge from the hospital of both surgical and medical patients could be further enhanced.

8. All segments of our population would be able to participate: the young and middle-aged as well as the elderly, the financially independent as well as the less affluent and the needy.

Care should not be limited to patients in the chronic category, but should include all illnesses—post operative, rehabilitative, convalescent, and cer-

tain conditions of the chest-lungs-heart, to mention only a few.

One final observation indicates further reason, and a vital one, for home care expansion. Advances in surgical techniques and preventive and therapeutic medicine have resulted in extending life expectancy. The portion of the population over 65 years old was 9 million in 1940, 16 million in 1960, and conceivably could be 25 million by 1980. Within this group will be found the highest incidence of chronic illness often noted for long-term disability.

Concern is evident among those close to the national health picture about why the home care programs have not been more generally accepted and expanded. The A.M.A., A.H.A., U.S. Public Health Service, Blue Shield Plans, and Blue Cross Association have participated in institutes and workshops on "home care." Yet we have in existence today about 35 coordinated home care programs with less than 5,000 participants. In view of the aforementioned advantages, one may speculate as to the reasons behind such slow growth. On the other hand, we must not leap forward without solid ground underfoot.

First, we must define what is meant by a coordinated home care program. It is centrally administered and, through coordinated planning, evaluation, and follow-up procedures, provides for physician-directed medical, nursing, social, and related services to selected patients at home. The physician, therefore, is the key to the success of any plan, as it is a medical program under the direction of the physician. Should he *not* be aware of its effectiveness, he will not participate or recommend it to his patients.

Last year a resolution was submitted on home care for consideration by the California Medical Association. It was passed without a dissenting vote, but, in hearings a month prior, the same resolution failed to pass. Inquiry later led to the conclusion that many physicians *did not understand the program*, while still others expressed anxiety that this created another area "wherein the Federal government might expand its efforts toward further socialization of medicine." Others have expressed the fear of the hospital encroaching upon the practice of medicine. Some see the disrupting influence of the program on the doctor-patient relationship, referring to those situations where another physician might "carry on for the original physician."

It is evident that the average physician has seen very little written material, or heard little if anything at all, on this subject. Consequently, he is unfamiliar with the advantages and potentialities of such an arrangement to effectively care for his patients in their homes. Thus the necessity of acquainting the medical profession with the value of this program should be of prime importance.

Unfortunately, a lack of interest is evident, as some physicians will send patients home only when their recovery is such that there would be no need for ancillary medical services at home. Physicians should consider the importance of coordinated home care in helping the patient's convalescence and in reducing expenses.

Some will see the home care program as a social welfare design for care of the indigent sick, rather than as a modality compatible with the best interests of the private practice of medicine. This latter was recognized by the House of Delegates of the A.M.A. in December, 1960, in their approval of a report stating that "physicians be urged to participate in organized home care programs for any patient who can profit from the program, and to promote such programs in their communities."

There will always be a few physicians who rebel at any change in the "status quo." These individuals are satisfied with everything just as it is and would not care to change their pattern by participating in any "new" program.

There undoubtedly would be less need for utilization of coordinated home care by certain types of practitioners, such as ophthalmologists, otolaryngologists, dermatologists, and obstetricians. In the last instance, it is conceivable that obstetrics may again revert to a home service, as it has in certain areas. More specific data on the physician's attitude toward home care will be available in the near future following the issuance of a report of a survey conducted by Donovan J. Perkins of the Attending Staff Association of Rancho Los Amigos Hospital in Los Angeles County, with the cooperation of the California Medical Association.

There is no question that the physician should be the key person in a coordinated home care program. An effective approach to inform, encourage and publicize to the physician to share in further program development must be created.

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# CASE REPORTS

## **An Unusual Case of Bacterial Endocarditis in An Infant with Congenital Heart Disease**

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ALTHOUGH mixed bacterial endocarditis is rare (only 17 reported cases<sup>2</sup>), the consequences of overlooking this diagnosis may be so grave that the possibility must be considered in all cases of bacterial endocarditis. It is particularly important to consider mixed infection in patients with endocarditis who do not respond to apparently adequate antimicrobial therapy. None of the three major texts on children's heart disease mentions mixed infection as a possible consideration in the patient with endocarditis resistant to therapy.<sup>7,11,16</sup> It is the purpose of this paper to report a case of probable double bacterial endocarditis with two organisms in a one-year-old boy with congenital heart disease who interestingly also had a double cardiac defect. So far as we could determine, this is the first reported case of mixed bacterial endocarditis in an infant.

### **REPORT OF A CASE**

A 12-month-old white boy, known to have had a heart murmur since six weeks of age, was admitted to Children's Memorial Hospital, University of Oklahoma Medical Center, with chief complaint of daily temperature elevations for one month. He had been examined by his family physician on several occasions and no explanation for fever had been found. He had received intermittently, without apparent effect, several antibiotics including chloramphenicol and several of the tetracycline derivatives. Until the onset of the present febrile illness, he had been in good health and had grown normally.

The body temperature was 101° F, pulse rate 160, respirations 40 per minute, blood pressure in the right arm 120/60 mm of mercury, 100 mm (by flush-arms) and 50 mm (by flush-legs). The baby was 31 inches long and weighed 22 pounds 5 ounces. He was well-developed and well-nourished but pale.

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He was extremely irritable but in no acute distress. Slight enlargement of cervical nodes was noted. The anterior fontanel was slightly patent. There was no evidence of upper respiratory tract or middle ear infection. The neck was supple. The lungs were clear to auscultation. There appeared to be mild spindling of the fingers.

On cardiovascular examination, it was noted that femoral artery pulsations were greatly diminished and delayed. Slight prominence of the left side of the chest was observed and the cardiac impulse was combined and hyperdynamic. A prominent systolic thrill was felt at the xyphoid process and a lesser systolic thrill at the suprasternal notch. There was a grade 4/6 harsh blowing holosystolic murmur which was maximal at the lower left sternal border. The first sound was masked by the systolic murmur. The second sound was of slightly increased intensity and normally split. There was a third sound followed by a grade 2/6 mid-diastolic rumbling murmur at the apex.

The liver edge was palpable 2 cm below the right costal margin. The spleen was enlarged to 5 cm below the left costal margin. There was no splenic friction rub. No abnormalities were noted on neurological and fundoscopic examinations. There were no petechiae, Osler nodes or Janeway spots.

The hemoglobin content of the blood was 8.5 gm per 100 ml, and the hematocrit 29 per cent. Leukocytes numbered 15,450 per cu mm—54 per cent polymorphonuclear cells, 4 per cent banded, 42 per cent lymphocytes, 3 per cent monocytes and 1 per cent eosinophils. The red cells appeared hypochromic and microcytic. The corrected sedimentation rate on admission was 25 mm in one hour. Reticulocyte counts were 1.3 per cent to 3.4 per cent. Platelets appeared normal. No abnormalities were noted on repeated urinalysis. The blood urea nitrogen was 7 mg per ml. Bilirubin was within normal limits and the result of a febrile agglutinins test was negative, as were lupus erythematosus preparations. Total serum protein was 6.0 gm per 100 ml—albumin 3.1 and globulin 2.9. Alpha globulin was within normal limits. A roentgenogram of the chest showed moderate cardiac enlargement and

pulmonary plethora. No abnormalities were seen in roentgenograms of the skull and of the hands. An electrocardiogram was consistent with left ventricular hypertrophy and possible left atrial hypertrophy.

A clinical diagnosis of acyanotic congenital heart disease with both an aortic coarctation and a ventricular septal defect was made. Bacterial endocarditis was considered the most likely cause of the febrile illness.

During the first four days in hospital the patient had daily temperature elevations of 103° F to 105° F. Five separate specimens of venous blood were obtained for culture during the first 48 hours at the times of temperature spikes. On the second hospital day, the patient was digitalized when the heart rate became 180 per minute, the liver edge was palpable 4 cm below the right costal margin and a significant increase in the transverse diameter of the heart was visible roentgenographically. On the third hospital day 50 ml of packed red cells was administered by slow transfusion. On the fourth hospital day, three specimens of iliac marrow were obtained for culture and administration of aqueous sodium penicillin, 12 million units per day intravenously, was begun. The patient became afebrile in 12 hours and remained so for two days. Fever recurred on the seventh hospital day and there were daily spikes to 102° F and 103° F for the next ten days. On the sixth hospital day, all three marrow cultures were reported positive for *Streptococcus viridans*. From the eleventh to the eighteenth hospital day, he received streptomycin intramuscularly, 125 mg each six hours. Probenecid was given orally from the eleventh to fiftieth day (250 mg per day). On the sixteenth hospital day, a hemolytic, coagulase-positive *Staphylococcus aureus* grew on two of the original five venous blood cultures. Disc sensitivity studies revealed that both organisms isolated were sensitive to penicillin, tetracycline, streptomycin, erythromycin, chloramphenicol, kanamycin and vancomycin. The intravenous penicillin dosage was increased to 20 million units a day on the sixteenth day. On the eighteenth hospital day, administration of chloramphenicol, 150 mg intramuscularly each six hours and gantrisin, 330 mg orally each six hours, was begun. Twelve hours later the patient was afebrile and then remained afebrile during the remainder of his stay in hospital except for a transient elevation to 101.4° F on the thirty-first day. On the twentieth hospital day, penicillin was decreased to one million units of aqueous penicillin intramuscularly each four hours, and on the twenty-sixth day to 400,000 units every four hours of penicillin-V orally. Chloramphenicol was given intramuscularly for ten days and then continued orally at a dosage of 150 mg every six hours for a total

of 33 days. On the fifty-second hospital day, the patient having remained afebrile for three days after discontinuing antimicrobial therapy, was discharged from hospital.

When examined a month later, he had gained three pounds and had had no recurrence of fever. The hemoglobin content of the blood was 11 gm per ml. There was no evidence of congestive heart failure and the cardiac sounds and murmurs were unchanged.

#### DISCUSSION

Both Orgain and Poston<sup>13</sup> (1942) and Olinger<sup>12</sup> (1948) suggested that mixed bacterial endocarditis was not as rare as previous reports had indicated. Pancy's<sup>14</sup> (1960) observation of an incidence of 5.4 per cent of mixed infections in a review of 186 episodes of bacterial endocarditis would appear to confirm their postulation. The findings of Orgain and Poston<sup>13</sup> indicated that recognition of mixed bacterial endocarditis is enhanced with increased clinical suspicion of this possibility and more thorough and diligent laboratory and bacteriological investigation. The diagnosis of mixed infection is not critical when both organisms are susceptible to the same antimicrobial agents, but when the susceptibility patterns differ, optimal therapy for one organism may not be adequate for the other.

We do not feel that the present case is a proved example of mixed bacterial endocarditis for the following reasons: (1) Staphylococci (including coagulase-positive organisms) are common blood culture contaminants. (2) The long period for emergence of the staphylococcus (15 days) suggests the possibility of contamination and (3) Never were both organizations demonstrated simultaneously. On the other hand, items of evidence that there was mixed infection were: (1) The same kind of staphylococcus was recovered from two of five cultures of venous blood, which is a high rate of recovery for a patient previously treated with antibiotics<sup>1</sup> and (2) The clinical response to antibiotics was consistent with the presence of a double infection: however, it is possible that there was only a streptococcal infection and that the favorable course following the addition of chloramphenicol and sulfonamide to the treatment regimen was due to better penetration of the vegetations by these latter antimicrobial agents of smaller molecular size.

It is interesting to speculate as to whether or not this infant had two sites of vegetation—one in association with the ventricular septal defect and one at the site of aortic coarctation. It is possible that the streptococcal infection could have formed the vegetation at the site of the coarctation and thereby have been recovered more readily from the iliac marrow



cultures. If the staphylococcus formed the vegetation in association with the ventricular defect, it is possible that systemic venous blood taken from the upper trunk would have a higher concentration of this organism than the organism at the coarctation site. We could not be certain that the positive venous cultures were from the upper trunk specimens, as sample labeling was not complete. We know of no autopsy-proved cases of mixed endocarditis in which there were separate vegetations of different organisms; so far as we could determine, in all such cases reported, all organisms isolated were recovered from all vegetations.

Based partially on our experience with the present case, it is now the policy of our hospital to culture at least six specimens of venous blood\* and one of bone marrow<sup>10</sup> from all patients with suspected bacterial endocarditis before starting therapy. All specimens are carefully labeled as to exact sample site and time. The temperature of the patient at the time the specimen was taken is also recorded.<sup>17</sup> Two to three milliliters of blood from each specimen are inoculated in 25 ml of brain-heart-infusion broth. To minimize the chances of contamination, specimens of the culture broth are removed for examination only if the gross appearance indicates bacterial growth. Specimens are taken from culture bottles with a sterile syringe and needle without removing the bottle cap. Such specimens are streaked on blood agar plates. The magnitude of growth is always carefully recorded. A part (0.5 to 1.0 ml) of each blood specimen obtained is also cultured in thioglycollate medium for isolation of anaerobic organisms, particularly anaerobic streptococci and bacteroides. Blood cultures are observed for ten days or longer. It is doubtful that the more elaborate culture techniques used by Orgain and Poston<sup>13</sup> would yield, as they claim, positive cultures in all cases of bacterial endocarditis, since most workers agree that there is a "bacteria free" or "abacteremic" phase in a small proportion of cases.<sup>15</sup> Lowe and Eiber<sup>9</sup> noted an incidence of 7 per cent (from 166 total cases) of patients with bacterial endocarditis in whom repeated blood and bone marrow cultures were sterile. The data of Hill and Bayrd<sup>6</sup> indicated a probable relationship between the presence of phagocytic reticuloendothelial cells in the circulating blood and persistent negative blood cultures in patients with bacterial endocarditis. Although our experience in children with this latter technique is limited and has not yet proved of definite help, we routinely examine at least two first drop ear lobe smears for these phagocytic cells. When it is not possible to obtain a bacteriological

diagnosis by the techniques outlined in patients with cardiac defects and persistent fever in whom the clinical diagnosis of bacterial endocarditis is strongly suspected, we agree with Finland<sup>3</sup> and others<sup>1,8</sup> that it is justified to begin antimicrobial therapy rather than to delay treatment since: (1) The chances of recovering organisms on subsequent cultures are quite small, (2) in a small proportion of cases of endocarditis cultures will never be positive, and (3) a prolonged delay in starting therapy may decrease the patient's chances of recovery.<sup>4,5</sup> It is our opinion that only bactericidal drugs should be used in these circumstances, and that the most appropriate drug to be used is based on the most likely etiological organisms as suggested by the clinical findings.

#### SUMMARY

An infant with double congenital cardiac defects (ventricular septal defect and aortic coarctation) survived an episode of probable mixed bacterial endocarditis (*Streptococcus viridans* and coagulase positive, hemolytic *Staphylococcus aureus*). The importance of considering a mixed infection in patients with bacterial endocarditis resistant to apparent adequate therapy is emphasized. It is possible that the patient had one type of vegetation at the site of coarctation and another in association with the ventricular septal defect.

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## Hydrocolpos in a Newborn Child

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HYDROCOLPOS is a rare condition which occurs in newborn female infants as the result of stimulation of maternal estrogens. It consists of atresia of the vaginal outlet and excessive secretion of the cervical glands, and produces a midline mass and bulging at the introitus. It should be suspected when a midline mass is found in a neonatal female.

Various names have been applied to the condition. We have chosen to use *hydrocolpos* because the Greek roots of the word (*hydro*, the word for water, and *colpos*, a term pertaining to the vagina) explain its nature accurately—that is, a prominent early feature is the accumulation of non-bloody fluid in the vagina. The process has also been called *hydrometrocolpos*, a term that indicates involvement of the uterus, which may indeed occur secondarily but not always. Hydrocolpos should be differentiated from hematocolpos, which occurs at the time of menstruation.

Reports of hydrocolpos in the literature were reviewed quite thoroughly by Spence in 1961.<sup>4</sup> He stated that up to 1940 only 20 cases had been reported, only two of them in the English literature. From 1940 to the time of his review, 36 cases were reported in 20 articles, and an additional eight in textbooks. Spence added to these the reports of four cases that he had observed. Kereszturi<sup>2</sup> in 1940 reported on a case diagnosed at eight and one-half weeks, in which an excretory urogram was used for the first time to aid in the diagnosis; exploratory laparotomy, however, was necessary for confirmation. Kereszturi noted that the original case report in English was made by Godefoy in 1856.

A comprehensive review of the etiology was un-

dertaken by Mahoney and Chamberlain in 1940.<sup>3</sup> There are two theories, both of which may be correct: (1) that an imperforate hymen is the true cause; and (2) that a thick membrane is responsible. The latter is considered to represent atresia similar to that of imperforate anus. The fluid accumulation is thought to be owing to placental transfer of the maternal estrogens, which stimulate the cervical glands. Evidence in support of this theory is found in reports of newborn gynecomastia and vaginal bleeding at birth. Spence<sup>4</sup> noted that in one of the cases he observed, relief of obstruction was obtained by incision and drainage when the patient was eight weeks old; reoperation at age six months revealed only a tiny amount of secretion.

Hydrocolpos is clinically apparent at birth, or within the first few weeks of life. However, if it is



Figure 1.—Urogram seven hours after birth. Note bilateral hydronephrosis. There is a complete left duplication anomaly (not well seen in reproduction).

Presented before the Section on Urology at the 92nd Annual Session of the California Medical Association, Los Angeles, March 24 to 27, 1963.





Figure 2.—Hypaque® enema and urinary bladder cystogram (lateral view) revealing large space between each.

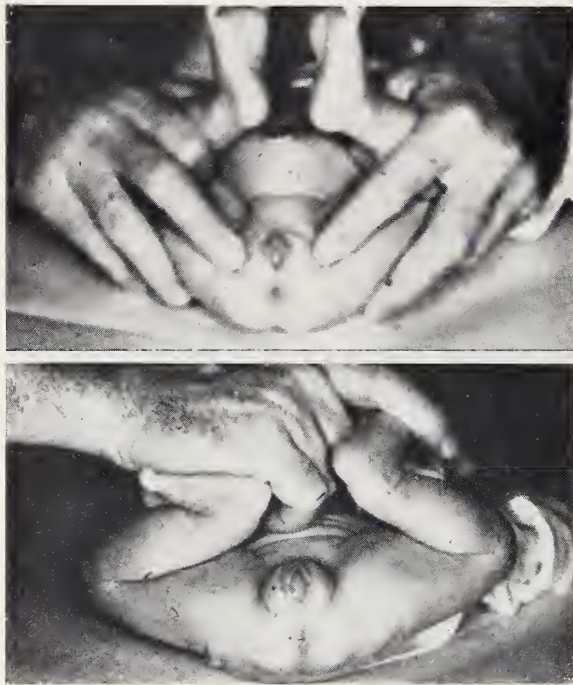


Figure 3.—*Above*, introitus with baby not crying. *Below*, introitus with baby crying. Note bulging membrane.

not recognized early, it may not be identified until puberty, at which time a foul, purulent material (rather than bloody fluid) appears. Because improper diagnosis leads to disastrous end results, while correct diagnosis and relatively simple treatment result in cure, we are led to present our recent experience with a case.



Figure 4.—Vaginogram, made after withdrawal of 30 ml of fluid and injection of 30 ml of Hypaque® in 1:1 dilution. Note air contrast.

#### REPORT OF A CASE

A female child, one of twins, was noted to be unable to void after 24 hours, and was catheterized. A midline mass and a bulging mass at the introitus were recognized. The pediatrician ordered radiologic studies. An intravenous urogram (Figure 1) showed decided obstruction of both ureters, similar to that seen in hydronephrosis of pregnancy. In addition, the superior duplication anomaly of the left kidney was not involved in the obstructive process. Roentgen studies after an enema of diatrizoate sodium (Hypaque®) showed the rectum to be displaced posteriorly and laterally. A cystogram showed that the bladder was pushed anteriorly (Figure 2).

The child was restless, would not eat properly and had difficulty with voiding. Physical examination by one of the authors on the fifth day confirmed the pediatrician's findings, including a soft midline mass. It was difficult to outline the exact edges of the diffuse mass, but it appeared to fill the entire abdomen to above the umbilicus. Each time the child cried, a large bulging membrane presented itself at the introitus. When abdominal pressure was not exerted, the mass retracted and the introitus appeared normal (Figure 3). The urethra was recognized in its normal position. A catheter was easily introduced into the urethra and urine was passed in amounts ranging from 50 to 100 ml. The urine was chemically within normal limits and no abnormal contents or organisms were observed on microscopic examination or on culture.

The child was taken to the operating room, where all previous findings were confirmed. A No. 18 (French) needle was inserted into the membrane at the introitus, and 30 ml of milky, white fluid was removed and sent for culture and for cell block study. The culture was negative for pathogenic organisms and the cell block revealed normal, estrogenically-stimulated cells. Thirty milliliters of Hypaque was injected and a vaginogram was made (Figure 4). This confirmed the suspected diagnosis. The uterus did not appear to be involved. A linear incision was made in the introitus membrane, which permitted the remaining fluid (estimated at about 200 ml) to escape and left the introitus wide open.

The restlessness and feeding problem disappeared and the child was able to void normally. She was discharged home on her second postoperative day and remained normal throughout the ensuing two months. She was then readmitted for urological evaluation. Repeat intravenous pyelograms and cystogram were made, and cystoscopy was done. The intravenous pyelograms showed pronounced improvement since the relief of pressure, with an approximately 80 per cent return to normal. There was reflux up all three ureters (Figure 5). Cystoscopy revealed a normal bladder neck and no residual urine. (The child will be followed closely, and it is hoped to observe the urinary tract periodically through puberty.)

#### DISCUSSION

Spence<sup>4</sup> reported that in 25 of 40 cases of hydrocolpos the condition was recognized before the patient was two weeks old. His review showed that the major physical signs are an abdominal mass, vaginal bulge and urinary obstruction, such as were noted in the case reported herein. However, it is also necessary to be on the alert for gastrointestinal symptoms, for evidence of circulatory obstruction or for imperforate hymen without a bulge. Any one of these findings may lead the clinician to suspect hydrocolpos. It is most important to observe the patients in a good light, and to watch for the vaginal bulging which occurs with crying or with abdominal pressure. Typically, the midline mass does not disappear on catheterization. When these physical signs are present, the diagnosis can be proved by aspirating some of the fluid and injecting opaque medium for x-ray verification. In addition, air contrast films of the bladder may be helpful. Air contrast was not used in the present case because the films already made were sufficient to make the diagnosis certain.

Once the proper diagnosis has been made, treat-



Figure 5.—Reflux cystogram two months after operation. Reflux was present in all three ureters.

ment consists of prompt incision of the membrane. Any of several types of incision may be used—cruciate or linear, or marsupialization of the membrane by sutures may be carried out. Any method which leaves the membrane open and gives adequate drainage will suffice. Laparotomy is not necessary, and should be avoided.

#### CONCLUSION

Hydrocolpos is a rare disease entity found in neonatal females. Failure to identify it promptly may lead to death or to irreversible urinary disease. A midline mass which does not disappear on catheterization and the presence of a bulging membrane at the introitus on crying or pressure are the clues to diagnosis of this congenital anomaly. Simple aspiration or incision of the membrane will suffice to save a life.

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# Eosinophilic Granuloma of the Temporal Bone

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EOSINOPHILIC GRANULOMA of bone, Hand-Schüller-Christian disease, and Letterer-Siwe disease have been the subject of disputes by clinicians and pathologists as to whether they are variants of one disease or are separate entities. Lichtenstein<sup>6</sup> grouped them under the term "histiocytosis X," referring to the underlying proliferation of histiocytes in all three conditions. From the clinical standpoint, however, there seemed to be enough points of differentiation to keep them separate and Table 1 illustrates the points which appear to set apart the disease processes. In an extremely complete review of idiopathic histiocytosis, Oberman<sup>8</sup> studied 40 cases and many of his sources of reports were drawn on for the information in the table.

In 1893, Hand<sup>5</sup> described the case of a 3-year-old boy with polyuria, hepatosplenomegaly, cutaneous petechiae, exophthalmos and destructive skeletal lesions. Schüller reported a 5-year-old girl with "map-like" lytic defects in the femur, ilium and skull. Christian<sup>2</sup> reported a 5-year-old girl with bony defects, exophthalmos and diabetes insipidus. The term *eosinophilic granuloma* of the bone was originated by Lichtenstein<sup>7</sup> and Jaffe when they reported two cases of solitary lytic bone lesions consisting microscopically of phagocytic cells and prominent collections of eosinophils. The terms *Letterer-Siwe*<sup>11</sup> disease followed Letterer's case report in 1924 and Siwe's report of seven cases in 1933.

As characteristics of this disease, Siwe<sup>11</sup> listed hepatosplenomegaly, a hemorrhagic diathesis, lymphadenopathy, anemia and skeletal defects. In Letterer's case there were no skeletal lesions. Wallgren,<sup>12</sup> Farber, and Green and Farber were among the first to consider the three conditions as a clinical entity with different manifestations. There are still,

however, many observers who believe that these conditions show entirely different patterns clinically and anatomically. In his study, Oberman<sup>8</sup> said there is no definite correlation between histologic findings, clinical findings and ultimate outcome of the disease. The prognosis is often best predicted by clinical evaluation. Because of the variable nature of the clinical course, some method of subdivision is desirable. Since the case here reported concerns eosinophilic granuloma, it might be well to enlarge on this particular entity.

Eosinophilic granuloma is a locally destructive lesion. When it involves the temporal bone, it is associated with discharge of exudate and with associated fibrous and granulation tissue. Punched-out lesions, radiographically visible, are characteristic.

Microscopically, the involved area consists of brownish-white granulation tissue with a large number of histiocytes, and the lesion has the appearance of granuloma. Because of the large number of eosinophils, the term *eosinophilic granuloma* has been applied. As the lesion progresses, histiocytes pick up lipid and show the characteristic "foamy" appearance. In the later stage, the eosinophils disappear. In the final stages, fibrosis may be seen. Eosinophilic granuloma of bone is usually a solitary osteolytic lesion with a high incidence of occurrence in children and adults under 21. It is frequently found in the temporal bone and is, therefore, not uncommonly seen in otologic practice.<sup>9</sup> The typical punched-out area in the squamous portion of the temporal bone is not always visible radiographically, and even when it is, biopsy is necessary to confirm the diagnosis since the x-ray findings may be mistaken for those of multiple myeloma or carcinoma of a secondary type.

## COURSE AND PROGNOSIS

The prognosis is generally good although in most cases the deafness, which is of conductive type, is permanent. Deep x-ray therapy, the treatment of choice, usually results in a cure.

From the Department of Surgery (Otolaryngology), Stanford University School of Medicine, Palo Alto.

Presented before the Section on Ear, Nose and Throat at the 92nd Annual Session, Los Angeles, March 24 to 27, 1963.

TABLE 1.—Clinical Classification of Eosinophilic Granuloma, Hand-Christian-Schüller Disease and Letterer-Siwe Disease<sup>1,8</sup>

	Appearance of Lipid (Foam Cells)	Locale—Onset	Prognosis	General
Eosinophilic granuloma...	Early	Confined to skeleton (solitary lesion). X-ray changes shown	Favorable	Male to female 5:1. Histiocytic. Proliferation with superimposed eosinophils. Children, young adults
Hand-Christian-Schüller..	Late stages	Skeletal also visceral, soft tissues, skin, exophthalmos, diabetes insipidus	Less favorable	Adults, chronic course. Rapidly fatal in young
Letterer-Siwe.....	Late	No bone lesions. Disease of skin, soft tissue, viscera, No x-ray changes	Poor	Rare over age 2 years. Rapidly fatal course: (1) Hepatosplenomegaly, (2) Lymphadenopathy, (3) Skin eruptions

#### REPORT OF A CASE

A 2-year-old white boy was referred April 4, 1957, because of discharge of exudative material from the right ear. He had a history of upper respiratory tract infection and had received penicillin injections. A year previously he had had otitis media. On examination, a large polyp of granulation tissue in the right ear canal obstructed complete visualization of the ear drum. There was no pain or adverse systemic reaction. As the polyp continued to grow in the ensuing two weeks, it was surgically removed. Biopsy of the specimen showed it to be granulation tissue.

Various ear drops including steroids were employed but formation of polyps continued. On July 1 removal of many polyps of the ear canal was performed. A posterior marginal perforation of the drum was noted. On August 29 adenotonsillectomy and removal of more ear polyps were carried out. The pathologist reported inflammatory exudate and granulation tissue. As drainage and formation of polyps continued, radical mastoidectomy, using the endaural approach, was performed October 28. The canal, the mastoid cavity and the entire area were filled with granulation tissue, and it was impossible to remove all the diseased tissue. At this time the pathologist noted: "Some of the histologic features are not inconsistent with a benign form of histiocytosis (e.g., eosinophilic granuloma)."

During the period before operation x-ray films of the area had been taken from time to time. One, on April 16, was reported as showing possible "exostosis, bony, with no abnormality in the temporal bone." Reporting on another film (Figure 1) that was taken about a year later but before operation, the radiologist noted: "There appears to have been a mastoidectomy on the right. No other abnormalities were demonstrated." This illustrates the bone destructive nature of the process. Films of the extremities revealed no definite abnormalities in the osseous or soft tissue structures.

In the year following the operation, polyp masses formed rapidly and frequent removal seemed to make them grow even faster, associated with discharge of a foul-smelling exudate. In spite of this, the general physical condition and the rate of body growth of the patient were entirely satisfactory. Mastoidectomy by the postauricular approach, in order to facilitate cleaning out of the abnormal tissue in the posterior area, was carried out September 15, 1958. Granulation tissue and necrosis seemed to be everywhere. There were areas of debris and decay with complete destruction of the dural plate. In several areas, dura was exposed and granular and necrotic material covered the dura and the bone structures throughout. Again, even using the Zeiss operating microscope, it was not possible to remove



Figure 1.—X-ray of mastoid. Arrow indicates punched out area of destruction in temporal bone.

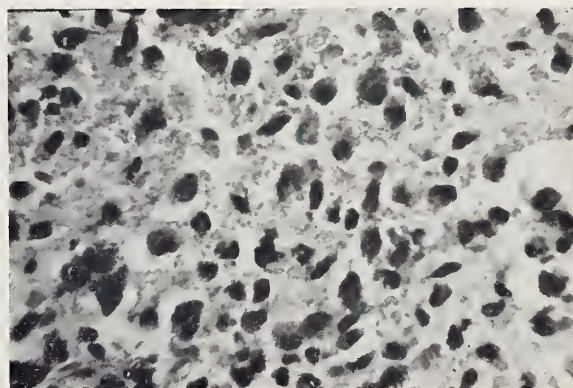


Figure 2.—Photomicrograph showing large multinucleated histiocytes. Eosinophils, not well shown in this black and white photograph, were plainly visible in color films.

all of the disease process, so extensive were the granulations. The pathologist reported the specimens "consistent with either Hand-Christian-Schüller disease or of eosinophilic granuloma and a diagnosis of reticulo-endotheliosis." (See Figure 2.)

On December 9, 1958, the patient was referred to a radiologist, who reported treatment in the following manner:<sup>4</sup> "A single lateral field, measuring 7 x 7 cm, directed to the right temporal bone was used. The calculated dose at a level of 3 cm beneath the skin was 800 r in a 15-day interval. The technical factors were as follows: 200 Kv, hvl of 1 mm Cu, target skin distance of 50 cm."

Immediately the symptoms regressed. An audio-



gram showed a considerable hearing loss. When last examined four and a half years later the patient had no evidence of granular or polypoid material and the mastoid bowl area appeared dry and clean. The hearing level remained unchanged with an average loss of about 35 decibels.

333 North San Mateo Drive, San Mateo, California 94401.

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## EDITORIAL

### In the Interim

UNDER PRESENT LAW California's State Legislature meets every two years for the consideration of legislation of a general nature. These sessions come in the odd-numbered years. In the even-numbered years the Legislature meets for the consideration of an annual budget for the state.

In association with the general sessions, or more likely the budget sessions, the Governor may call a special session of the Legislature to consider items listed in a specific agenda.

The "regular sessions," as the general sessions have become known, tend to bring out a large number of proposals, some of which are entered by the members of Legislature in good faith and some of which are obviously put into the hopper to appease constituents.

In the past two decades, experience has shown that about one legislative bill out of each ten introduced has some bearing on the public health or the practice of medicine. These are the measures which the California Medical Association and the Public Health League of California watch or follow closely through their progress in the 80-member Assembly or the 40-member Senate.

In the 1963 legislative session several thousand bills were introduced and the usual 10 per cent were singled out for inspection. Most of the measures which required close following were either adopted or killed in committee. A fair number, however, did not come to a definite conclusion during the legislative session but were referred to interim committees for further study and report.

Such referral to interim committees has come more and more into prominence in recent years as a legislative process which (1) prevents passage of a bill at the moment, (2) provides for a period of real study for controversial measures and (3) keeps alive a subject which otherwise might be dealt with summarily in the pressure of a busy legislative session.

The interim committees in this way assume an importance which had not been particularly noticeable until the last few years. As an example, the Assembly side of the Legislature this year sent 469 legislative measures and 221 resolutions to interim committees. Of these, 47 were measures of general interest to the healing professions and 20 more related to insurance.

In the next two years these measures will be subjected to the scrutiny of interim committees, to public hearings, to committee debate and to the blandishments of legislative representatives interested either in promoting or opposing the objectives of the bills under study.

This interest will be shared by representatives of the California Medical Association and the Public Health League, who will keep close tabs on the various items and the committees to which they are assigned. The interim committees usually consist entirely or in large part of the committees which heard the measures during the legislative session.

The California Medical Association was the sponsor of four legislative bills which have been sent to interim committee for study.

Two of these measures, Senate Bill 333 and Senate Bill 374, are of particular interest to the C.M.A. and will be pursued with the greatest of interest during their interim committee progress. SB 333 would provide that the medical fee schedule adopted by the State Industrial Accident Commission shall establish fees for industrial medical care at a level not less than the customary fees paid for the same services by the public at large. This proposal, along with many others relating to the industrial accident laws, now goes into interim committee study. If the principles in this bill are approved and the bill is adopted and signed in the 1965 Legislature, the bugaboo of industrial fees would be leveled once and for all. Industrial fees have been notoriously low since they were first adopted about 50 years ago, and while some progress has been made since 1946 in bringing them more nearly in line with



customary fees, there is still a wide gap which discourages many physicians from accepting these cases. The ability to pay is no criterion here, since the law requires that the employer or his agent must meet the necessary cost of medical and surgical care.

Senate Bill 374 proposes similar treatment for medical fees paid by state agencies for services to recipients of care under a variety of state programs. Here again, the state agencies are asked to pay medical and surgical fees for these wards in an amount commensurate with that customarily paid by the general public for the same service. This would apply to welfare cases, crippled children's services and other state programs.

Other C.M.A.-sponsored measures sent to interim committees include Assembly Bill 1972, to implement the Keogh law and AB 2007, to bring income tax deductions for health care in the state into line with those followed by the federal government.

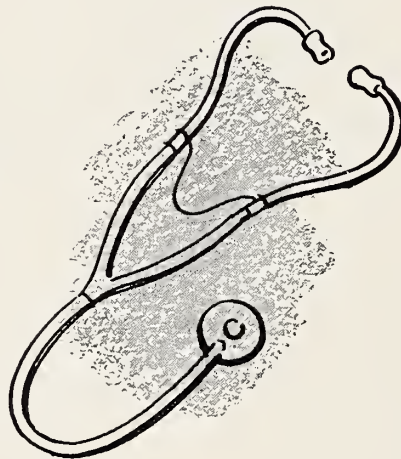
Also to be followed closely by C.M.A. representatives will be several measures sponsored by labor interests, including a complete program of state-operated medical care. This proposal is reminiscent of the measure sponsored and lost by Governor Earl Warren in 1945. One Assembly and one Senate measure to provide such a system will be before interim committees.

In addition, a number of measures in which med-

icine is directly interested will come in for interim study in preparation for the 1965 legislative session. These include a variety of subjects, from establishment of a board to license massage parlors to a state medical disciplinary board, and from sales taxes on prosthetic appliances to legislation dealing with drug addicts.

Referral of this volume of work to interim committees means that the legislative representatives of the Association will have to continue their activities the year around. This system of legislative consideration demands an ever-alert scrutiny of the legislative process of the state. At the same time, it assures proponents and opponents of controversial issues of an opportunity to make their presentations outside the hurly-burly usually found in a legislative body facing a huge volume of work and a mandatory deadline for completion of its assignments.

We are fortunate in the California Medical Association to have the dedicated and experienced Committee on Legislation and legislative representatives who have advocated our interests for some years. Their efforts, we know, will be most effective during this lawmakers' recess and will show up when the next general session gets under way in 1965. The support of all members, when and if called on to participate in this work, will be tremendously helpful to the entire profession.



# California MEDICAL ASSOCIATION

## NOTICES & REPORTS

### Council Meeting Minutes

*Tentative Draft: Minutes of the 494th Meeting of the Council, Los Angeles, Airport Marina Hotel, August 24, 1963.*

The meeting was called to order by Chairman Anderson in the Airport Marina Hotel, Los Angeles, on Saturday, August 24, 1963, at 10:00 a.m.

#### Roll Call:

Present were President Sherman, President-Elect Doyle, Speaker Quinn, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors Wilson, Todd, Goel, Bullock, O'Connor, Dalton, Murray, Davis, Miller, Watts, Campbell, Anderson, Dozier, Grunigen and Cosentino. Absent for cause: Councilors MacLaggan, O'Neill, Ham, Rogers, Hudson, Kaiser and Shaw.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Clancy, Marvin, Whelan, Clark, Tobitt and Bowman and Dr. Miller of staff; Mr. Howard Hassard, legal counsel; Mr. Eugene Salisbury of the Public Health League, component society executives Baker and Field of Los Angeles, Colvin of Monterey, Somerville of Napa, Donmyer of San Bernardino, Nute of San Diego, Pearce of Santa Clara and Brown of Sonoma; Dr. Malcolm Merrill, State Director of Public Health, Dr. Edward Rudin of the State Department of Mental Hygiene; Dr. Lester McDonald of the State Department of Social Welfare; W. Balentine Henley of California College of Medicine; Rev. Paul McCleave and Mr. John Pompelli of the A.M.A.; Mr. Robert Garrick, communications consultant; Dr. Paul Hoagland and Messrs. Paolini and O'Day of California Physicians' Service; Doctor Osmun Hull of the Monterey County Medical Society; Doctor Ernest Simard of the California Society of Pathologists; Doctor Warren L. Bostick, Francis E. West, Harold Kay and others.

#### 1. Minutes for Approval:

On motion duly made and seconded, minutes of the 493rd Council meeting, held July 13, 1963, were voted approval.

#### 2. Membership:

(a) A report of membership as of August 21, 1963, was presented and ordered filed.

(b) On motion duly made and seconded, 73 delinquent members, dues now paid, were voted reinstatement.

(c) On motion duly made and seconded in each instance, four applicants were voted Associate Membership. These were: Grace Goebel, Marin County; Virgil E. Erickson, Anne Marie Hayes, Santa Clara County; Harold M. Moore, Tulare County.

(d) On motion duly made and seconded in each instance, Retired Membership was voted for Doctor Elizabeth W. Tock of San Joaquin County and Doctor S. Henrietta Frederickson of Sonoma County.

(e) On motion duly made and seconded in each instance, reductions of dues were voted for three members, for reasons of illness or postgraduate study.

#### 3. Report of the President:

President Sherman reported on recent meetings he had attended (1) with state officials looking into greater safety for boxers, (2) with officials of the California College of Medicine, and (3) with the National Commission on Community Health Services. On the last-named he reported that two California counties may be selected as part of a national

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study being planned; on motion duly made and seconded, it was voted to approve the participation of California counties if so selected.

Doctor Sherman also reported on a meeting of the Council on Legislative Activities of the A.M.A., at which the timing of moves in behalf of proposed plans for medical care of the aged was discussed. He also reported that he and Mr. Hassard had met with the Board of Medical Examiners and the deans of medical schools for a discussion of the continuing education of foreign graduates and other subjects.

Doctor Sherman also spoke on the need of additional medical schools in California and suggested that the Association adopt a statement of its position. On motion duly made and seconded, the following statement was approved:

"The California Medical Association has an inherent interest in the development of education and training of Doctors of Medicine who would be available to take care of the health needs of the people of California. In this regard the California Medical Association stands ready to offer the facilities of its knowledgeable members in a consultative capacity for the resolution of any problems concerning future and present considerations in the various areas of California for new medical schools."

#### *4. Report of the President-Elect:*

President-Elect Doyle, reporting for the Committee on Committees, nominated Doctor Arnold Nutting of Marin County for membership on the Committee on Medical Aspects of Sports. On motion duly made and seconded, this nomination was approved.

Doctor Doyle also announced the opinion of the Committee that Doctor Albert C. Daniels be retained in all his appointive positions during his convalescence from illness and that alternates be appointed to fill his place in the event of his inability to act.

Doctor Doyle also reported on his recent attendance at Chicago meetings of medical executives and of the A.M.A. on communications matters.

A further nomination of a slate of members of the Editorial Board was, by vote, deferred for consideration to the October 5 meeting.

#### *5. California College of Medicine:*

Dr. W. Ballentine Henley, president of the California College of Medicine, discussed the financial needs of the school and reported most favorably on the recent meeting between trustees of the college and officers of the Association. He reported that some 50 physicians are under consideration for appointment as Dean of the college and that more than 600 applicants of high calibre have sought admission to the 1963 beginning class.

#### *6. State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, reported on illness resulting from recent picking of fruit in orchards on which agricultural chemicals had been used and outlined the far-reaching effects of such chemical use. He also stated that in the first seven months of the year only 11 cases of paralytic poliomyelitis had been reported, in contrast to several hundred in earlier years, and that of these only three could potentially be associated with immunization procedures. He also reported that trivalent vaccine has now been approved and has become available and that regulations to provide for its use in school children were being prepared.

Doctor Merrill further reported that meetings were planned for the two existing regional hospital planning boards and that two additional area boards may be formed. Meetings will also be held shortly on applications for funds to aid hospital construction. Present applications total 60 in number and \$150,000,000 in cost for projects which are apparently eligible.

#### *7. State Department of Mental Hygiene:*

Doctor Edwin Rudin, appearing in behalf of Doctor Dan Lieberman, director of the department, reported on federal legislation under consideration to provide funds for establishment and construction of mental health centers. A measure directed at these objectives has been approved by the U.S. Senate and is now in the House of Representatives, although differences in the funds to be provided will probably call for solution of the available money through a joint conference committee.

#### *8. State Department of Social Welfare:*

Doctor Lester McDonald, medical director of the department, reported on the completion of a nationwide study of the Aid to Needy Children program. In California, he said, 1.2 per cent of the families receiving A.N.C. assistance were found to be ineligible and 22 per cent of the children involved were illegitimate. The A.N.C. section of the department, he reported, is being reorganized to provide an improved record.

#### *9. California Physicians' Service:*

Doctor Paul Hoagland, board chairman of C.P.S., reported on the progress of the insurance affiliate, California Physicians' Insurance Corp., which in the first six months of 1963 did a gross business of more than \$1,250,000, paid claims of more than \$1,000,000 and covered more than 100,000 policyholders.

Doctor Hoagland also reported that the C.P.S. program of care of welfare patients in Santa Bar-

hara County was proceeding smoothly and within budget estimates.

#### 10. *Medical Executives Conference:*

Mr. William Nute of San Diego County reported on the decision of the conference in regard to methods of identifying members of component societies. The best method appears to be through the use of advertising in the classified telephone book pages, in which advertisements the society could outline its public service programs and suggest that questions of membership be placed before the society. The C.M.A. staff was asked to secure samples of such advertising already in use.

The conference also suggested that the Committee on Traffic Safety review an illustrated talk prepared by Doctor Robert M. Faggella Jr. on the subject of injuries resulting from automobile accidents involving youth. On motion duly made and seconded, this was referred to the Committee on Traffic Safety.

#### 11. *Medicine and Religion:*

Rev. Paul B. McCleave, head of the A.M.A. department of Medicine and Religion, outlined the objectives of this department, namely, the provision of care for the whole patient through the cooperation of physicians and the clergy. He showed a film produced by the A.M.A. as the first in a series, suggested that a cooperating committee be established in the C.M.A. and requested the nomination of a California physician for appointment to a board of ten physicians and ten clergymen established by the A.M.A.

On motion duly made and seconded, it was voted to ask the Bureau on Communications to study the implementation of this program in California and to refer to the Committee on Committees the request for a nomination to the A.M.A. Board.

#### 12. *Finance Committee:*

Doctor Davis presented a preliminary report on the financial results of the 1962-1963 fiscal year and commented on several items reviewed by the committee. He also asked that the suggestion of the auditors, to prorate the dues received on the basis of fiscal rather than calendar years be approved. On motion duly made and seconded, this proposal was approved.

Doctor Davis also asked approval of a proposal that the Committee on Cancer be permitted to host a luncheon meeting with a committee of the American College of Surgeons at its coming meeting. On motion duly made and seconded, it was voted to approve this function, with the understanding that costs would be met from the current committee budget and the committee instructed to apply for

additional budget funds if the cost would jeopardize the year's budget.

#### 13. *Certification of Specialists:*

Report was made for an ad hoc committee to review possible procedures for certification of members who had held such certification under boards of the American Osteopathic Association. The committee recommended appointment of a review committee which would consider the background and training of applicants and issue a statement of certification for applicants found eligible. The committee also presented a letter which it proposed to send to all present certifying boards, asking their cooperation. On motion duly made and seconded, it was voted to approve the certifying procedure and the proposed letter and refer to the Committee on Committees the proposed establishment of the certifying board.

#### 13. *Component Society Officers' Conference:*

Doctor Dozier outlined the proposed program for the annual conference of component society officers, scheduled to be held February 8, 1964. On motion duly made and seconded, the program was voted approval.

#### 14. *Commission on Medical Services:*

Doctor Murray, commission chairman, announced that the 1963 revision of the Relative Value Studies would be completed by December and be presented to the Council for approval.

Doctor Murray also presented a revised report on the components of an adequate health care plan and requested approval of it so that it could be used by various employee groups considering the purchase of health care insurance. On motion duly made and seconded, it was voted that the revised report be publicized through the C.M.A. and that thereafter it be available for the use of others. A statement is to precede the report indicating its preliminary nature.

#### 15. *Commission on Community Health Services:*

Doctor Harold Kay, chairman of the commission, presented a report dealing with several subjects, including medical aspects of sports and traffic safety, both of which will be subject to later report.

On Resolution No. 4-63, the committee reported its finding that this resolution, dealing with research to provide for better employment opportunities for the physically handicapped, was impractical. On motion duly made and seconded, it was voted to refer the subject matter of the resolution to the newly created Governor's Committee to study workmen's compensation in California.



On motion duly made and seconded, it was voted to approve the commission's suggestion that Community Health Week, October 20-26, 1963, be recognized. On a similar request on Diabetes Detection Week, it was moved, seconded and voted to take no action at this time.

Several suggested steps for accomplishment of better rapport with lay laboratories were presented. After discussion it was moved, seconded and voted to refer this subject back to the commission for discussion with bioanalysts, pathologists and internists, and for further recommendations.

Report was also made that the blood banks of California were meeting in San Francisco at this time and that later report may be made.

Doctor Kay also reported progress on the state-wide fluoridation campaign. House of Delegates resolution No. 10-63. An educational meeting is planned for January.

#### 16. Bureau on Communications:

Doctor Warren L. Bostick, chairman of the bureau, reported on the organization of forthcoming visits by officers to component societies. He also reported on existing and prospective programs in radio and television.

#### 17. Cardiovascular Research:

Doctor Watts reported that a study of the Paul B. Kelly Institute for Cardiovascular Research in Santa Rosa had been completed at the request of the Sonoma County Medical Society and that a report would be made to that society. Details of the report are being finalized.

#### 18. Staff Report:

Mr. Hassard reported on a staff study of possible meeting places for the Council and pointed out that the metropolitan Los Angeles and San Francisco

areas would be the most economical to use, both from a monetary and a time point of view.

He also reported that the financial report of Audio-Digest Foundation for the year ended June 30, 1963, showed this subsidiary to be in excellent financial condition. He paid tribute to Mr. K. L. Hamman for his business management of Audio-Digest and on motion duly made and seconded it was voted to send a letter of commendation to Mr. Hamman, his directors and staff.

#### 19. Pocket Identification Cards:

A proposal of the Alameda-Contra Costa Medical Association for the production and distribution of wallet identification cards to set forth medical facts was discussed and, on motion duly made and seconded, referred to the Commission on Community Health Services.

#### 20. American Medical Political Action Committee:

Doctor Todd, chairman of the California Volunteers for A.M.P.A.C., reported that the participation of California physicians represented a very small percentage of the potential and that contributions on a per capita basis were extremely low. He asked for greater participation by members, the recruitment of new members and improved financial contributions.

#### 21. Time and Place of Next Council Meeting:

The chairman, on motion duly made, seconded and unanimously voted, advised that the next Council meeting would be held at the Hilton Inn, San Francisco, on October 5, 1963.

#### Adjournment:

There being no further business to come before it, the meeting adjourned at 4:50 p.m.

CARL E. ANDERSON, M.D., Chairman

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# CALIFORNIA MEDICAL ASSOCIATION

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Completed application forms must be in this office soon so that time can  
be allotted.

NOTE: Limitation of space precludes the showing of Scientific Exhibits of this meeting.

#### **SECRETARIES OF THE SCIENTIFIC SECTIONS**

ALLERGY . . . . . Leo R. Melcher, M.D.  
150 Arch Street, Redwood City 94062

ANESTHESIOLOGY . . . . . Gordon C. Longsdorf, M.D.  
6580 Avenida Mirolo, La Jolla

DERMATOLOGY AND  
SYPHILOLOGY . . . . . Norman E. Levon, M.D.  
USC School of Medicine, Rm. 10620, LACGH,  
2025 Zonal Avenue, Los Angeles 90033

EAR, NOSE AND THROAT . . . . . Irwin Harris, M.D.  
4759 Hollywood Boulevard, Los Angeles 90027

EYE . . . . . Byron H. Demorest, M.D.  
5301 F Street, Sacramento 95819

GENERAL PRACTICE . . . . . Merlin A. Hendrickson, M.D.  
238 North Riverside Avenue, Rialto

GENERAL SURGERY . . . . . Harry E. Peters, Jr., M.D.  
400 29th Street, Oakland 94609

INDUSTRIAL MEDICINE AND  
SURGERY . . . . . C. Frederick Burton, M.D.  
478 30th Street, Oakland 94609

INTERNAL MEDICINE . . . . . James H. Thompson, M.D.  
490 Post Street, San Francisco 94102

OBSTETRICS AND GYNECOLOGY . Rolph L. Hoffman, M.D.  
2111 Fifth Avenue, San Diego 92101

ORTHOPEDICS . . . . . G. Wilbur Westin, M.D.  
2300 South Hope Street, Los Angeles 90007

PATHOLOGY AND  
BACTERIOLOGY . . . . . Melvin B. Block, M.D.  
St. Luke's Hospital, 1580 Valencia Street, San Francisco 94110

PEDIATRICS . . . . . Jock W. Bills, M.D.  
14914 Sherman Way, Van Nuys 91405

PHYSICAL MEDICINE . . . O. Leonord Huddleston, M.D.  
1910 Ocean Front, Sonto Monico 90405

PREVENTIVE MEDICINE AND  
PUBLIC HEALTH . . . . . Morris L. Grover, M.D.  
100 North Garfield Avenue, Pasadena 91101

PSYCHIATRY AND NEUROLOGY . Allen J. Enelow, M.D.  
910 Via de la Paz, Pacific Palisades 90272

RADIOLOGY . . . . . John L. Gwinn, M.D.  
Children's Hospital, 4614 Sunset Boulevard, Los Angeles 90027

UROLOGY . . . . . Michael J. Feeney, M.D.  
3415 Sixth Avenue, San Diego 92103



## In Memoriam

BESWICK, JOHN W., San Fernando. Died September 8, 1963, in San Fernando, aged 55, of heart disease. Graduate of the University of Southern California School of Medicine, Los Angeles, 1938. Licensed in California in 1938. Doctor Beswick was a member of the Los Angeles County Medical Association.



BURNHAM, PHILIP SMITH, Los Angeles. Died August 24, 1963, aged 66, of cerebral vascular thrombosis. Graduate of the University of Nebraska College of Medicine, Omaha, 1925. Licensed in California in 1925. Doctor Burnham was a member of the Los Angeles County Medical Association.



CALAWAY, ALLISON ARLINGTON, Fresno. Died August 6, 1963, in Fresno, aged 75. Graduate of the University of Arkansas School of Medicine, Little Rock, 1916. Licensed in California in 1920. Doctor Calaway was a member of the Fresno County Medical Society.



CRONIN, DAVID LLOYD, Sherman Oaks. Died August 5, 1963, in Sherman Oaks, aged 46. Graduate of Georgetown University School of Medicine, Washington, D.C., 1946. Licensed in California in 1948. Doctor Cronin was a member of the Los Angeles County Medical Association.



CRUM, ROLLAND ABBOTT, Oakland. Died August 23, 1963, in Oakland, aged 57, of glioblastoma multiforme. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1931. Licensed in California in 1931. Doctor Crum was a member of the Alameda-Contra Costa Medical Association.



GARRETT, ROBERT T., San Clemente. Died August 12, 1963, in San Clemente, aged 53, of heart disease. Graduate of the Long Island College of Medicine, New York, 1936. Licensed in California in 1946. Doctor Garrett was a member of the Orange County Medical Association.



GAUTHIER, AUGUST E., San Francisco. Died August 26, 1963, in San Francisco, aged 61. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1927. Licensed in California in 1927. Doctor Gauthier was a member of the San Francisco Medical Society.



JENKINS, RAYEL BUCYRUS, Los Angeles. Died September 5, 1963, in Los Angeles, aged 72, of acute coronary occlusion. Graduate of the College of Physicians and Surgeons, Medical Department, University of Southern California, Los

Angeles, 1919. Licensed in California in 1919. Doctor Jenkins was a member of the Los Angeles County Medical Association.



LIEBSHARD, ARON SAMUEL, Los Angeles. Died August 15, 1963, in Los Angeles, aged 71, of coronary occlusion. Graduate of Medizinische Fakultät der Universität, Wein, Austria, 1922. Licensed in California in 1942. Doctor Liebshard was a member of the Los Angeles County Medical Association.



PALMER, ALLAN, San Francisco. Died September 1, 1963, in San Francisco, aged 54. Graduate of the University of Oregon Medical School, Portland, 1934. Licensed in California in 1935. Doctor Palmer was a member of the San Francisco Medical Society.



POPE, JAMES B., Stockton. Died September 2, 1963, near Burson, Calaveras County, aged 46. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1943. Licensed in California in 1943. Doctor Pope was a member of the San Joaquin County Medical Society.



SCHEEZT, GEORGE IRA, Vallejo. Died August 18, 1963, at Travis Air Force Base, aged 57. Graduate of the Ohio State University College of Medicine, Columbus, 1930. Licensed in California in 1949. Doctor Scheetz was an associate member of the Solano County Medical Society.



THELEN, EMIL P., Monterey. Died August 22, 1963, in Monterey, aged 45, of thrombus of the left internal carotid artery. Graduate of Loyola University School of Medicine, Chicago, Illinois, 1943. Licensed in California in 1947. Doctor Thelan was a member of the Monterey County Medical Society.



WELLS, JAMES HADLEY, Long Beach. Died August 25, 1963, in Burbank, aged 53, of heart disease. Graduate of Tulane University School of Medicine, New Orleans, Louisiana, 1934. Licensed in California in 1945. Doctor Wells was a member of the Los Angeles County Medical Association.



WOOLSTON, WESLEY JOHN, Pasadena. Died January 28, 1963, aged 79, of heart disease. Graduate of the University of Illinois College of Medicine, Chicago, 1905. Licensed in California in 1925. Doctor Woolston was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

# INFORMATION

## Clarification of the Informed Consent Rule

HOWARD HASSARD, LL.B., and  
WILLIAM WHELAN, LL.B., San Francisco

AN ARTICLE on informed consent that was published in the December, 1961 issue of CALIFORNIA MEDICINE stressed, among other things, the rule that had been laid down by the Kansas Supreme Court in the case of *Natanson v. Kline*. That court has now clarified that ruling in the following case.

Three physicians were recently exonerated of all responsibility in the death of a three-year-old boy who died during a cardiac catheterization procedure. In a lawsuit filed in Kansas by the parents of the child the parents claimed that they were not sufficiently advised of the risks of the procedure to enable them to give an informed consent. The plaintiffs' claim was based upon a ruling of the Kansas Supreme Court in the earlier case of *Natanson v. Kline*, 350 P. 2d 1093.

After administration of 500 milligrams of sodium pentothal, the performance of a cardiac catheterization began. The young patient awakened and started struggling and 100 milligrams of sodium pentothal was injected into the bloodstream through the catheter that had been placed in the heart. Within 20 seconds after this injection, the patient's heart rate slowed considerably, his blood pressure was not obtainable, his pulse was barely perceptible. He was given oxygen and cardiac massage was instituted, but normal rhythm could not be established and he was pronounced dead about four hours later. A summary of the facts leading up to the performance of the cardiac catheterization is as follows:

When the child was about three years of age, his mother, noticing blueness about his lips, took him to the family physician, R. L. Obourn, M.D., in Eureka, Kansas. Dr. Obourn recommended that the child be examined by a well-known pediatrician, F. L. Menehan, M.D., of Wichita. After examination, Dr. Menehan made a diagnosis of a possible congenital cardiac defect. As an aid to further diagnosis, he asked that the child be placed in a hospital where cardiac catheterization could be performed. In answer to a specific inquiry from the mother about the risk or danger involved in cardiac catheterization, Dr. Menehan advised that the team which would perform this procedure had done 100 of them without any bad results.

Later, after a family discussion, both the mother and father took the child to Dr. Menehan and C. T.

Hagan, M.D. Both these physicians explained to the parents that there was essentially no risk involved in cardiac catheterization and that the procedure was done on both grown-ups and children. The parents later testified that they recognized there was some danger in any operation and that there was some risk involved in this procedure. There was no evidence offered that there was any medical error in determining that the diagnostic procedure was proper or that the choice of anesthetic or amount administered was erroneous.

The court concluded that the parents were fully informed and there was insufficient evidence to establish a case of liability against any of the defendants. The following part of the opinion clarifies the rule concerning informed consent:

... "We said in the *Natanson* case at page 406 it is the duty of a doctor to make a reasonable disclosure to his patient of the nature and probable consequences of the suggested or recommended treatment, and to make a reasonable disclosure of the dangers within his knowledge which are incident or possible in the treatment he proposes to administer. *But this does not mean that a doctor is under an obligation to describe in detail all of the possible consequences of treatment. To make a complete disclosure of all facts, diagnoses and alternatives or possibilities which might occur to the doctor could so alarm the patient that it would, in fact, constitute bad medical practice.*

"Further, on pages 409-410, we said the duty of the physician to disclose, however, is limited to those disclosures which a reasonable medical practitioner would make under the same or similar circumstances. How the physician may best discharge his obligation to the patient in this difficult situation involves primarily a question of medical judgment. So long as the disclosure is sufficient to assure an informed consent, the physician's choice of plausible courses should not be called into question if it appears, all circumstances being considered, that the physician was motivated only by the patient's best therapeutic interests and he proceeded as competent medical men would have done in a similar situation.

"In view of the mentioned rules set forth in *Natanson v. Kline*, supra, we are of the opinion that under the evidence the three defendant doctors made a reasonable disclosure of the nature and consequences of the proposed treatment."

(Italicizing of second sentence in first paragraph, ours.)

It is believed that the above opinion will be most helpful in clarifying what the courts mean when they speak of an informed consent.

California Medical Association, 693 Sutter Street, San Francisco, California 94102.



## Selected Physician Characteristics in California, as of April 1963

*A Report of the Bureau of Research and Planning, California Medical Association*

RECENTLY COMPILED FIGURES indicate that, as of April, 1963, there were 31,837 doctors of medicine in the State of California. Of these, 21,274 were in private practice; this figure includes physicians in individual practice, in partnerships, and in groups as well as those physicians employed by them on a salary basis. Of the overall total, 2,079 are retired or otherwise not now in active medical practice.

The remaining 8,484 were physicians in training programs, on hospital staffs, in medical administration, in preventive medicine, laboratory medicine, and research, and those employed by the federal government. Physicians employed by the federal government include those in the armed services and those employed by the Veterans Administration or the U.S. Public Health Service.

Among the 2,425 physicians employed by the federal government, the largest single employer is the Navy, with 807 physicians stationed in California. Almost half of these were in San Diego County alone, with another fifth in Alameda County. The next highest total (728) were employed by the Veterans Administration, with well over half located in Los Angeles County. The Air Force accounted for another 370 physicians and the Army for 340. There are 180 physicians working for the United States Public Health Service in California, with almost half employed in San Francisco County.

The median age of all physicians in California as of April was 43 years and 9 months. This median is exactly the same as it was two years ago in April, 1961. In the case of physicians not in federal service, the median age is slightly greater, 44 years and 8 months. This is approximately two months younger than the comparable median in 1961.

The average age of physicians in federal service is considerably less than for the total group. The median age for this group is slightly under 33 years, since a great proportion of physicians in federal service are in the armed forces.

Of the total physicians in California, those in General Practice account for 6,626 or 20.8 per cent. Comparing this group to only those who are actively engaged in practice, they account for 22.3 per cent. The next largest number of physicians are in Internal Medicine. This group comprises 4,688 physicians, which is equal to 14.7 per cent of the total or 15.7 per cent of those in active practice. The third most prevalent specialty is that of General Surgery, which accounts for 3,314 California physicians. This comprises 10.4 per cent of all physicians

As this article is published, approximately 32,000 physicians are living in California, 30,000 of whom are actively practicing medicine. Of this total, over 21,000 are in private practice. This represents a two-year net increase (not including the former osteopathic physicians) of approximately 2,500. This 9.2 per cent increase is slightly greater than the estimated 8 per cent rise in the total California population during this period.

California has continued to maintain its relatively high ratio of physicians to population. Whereas the national average indicates 132 non-Federal physicians per 100,000 civilians, the California ratio is 171 per 100,000.

or 11.1 per cent of those actively practicing. It should be noted that totals by specialty do not include retired physicians nor those who are not actively in practice. These totals, however, do include both full- and part-time specialists; therefore, General Practitioners who have a part-time specialty are indicated within their part-time specialty rather than as General Practitioners. A considerable number of these are former Osteopaths. There are a total of 2,197 part-time specialists in the State.

Of all physicians who have specified their source of professional income, 49.0 per cent noted that their *total* income was from fees-for-service and that they are in *individual practice*. The next largest group of physicians are on a full-time salary entirely. Salaried physicians account for 27.2 per cent of the state total. Physicians whose income is based on fees-for-service within a *group* or *partnership* practice comprise another 14.5 per cent of the population. These figures include only those physicians currently engaged in medical practice. Other segments of the physician population are those whose earnings are based on fees-for-service in individual practice in addition to a part-time salary (4.0 per cent), those in groups or partnerships with additional part-time salaries (1.5 per cent), and those on full-time salary who also receive some fees-for-service (3.7 per cent). It will also be noted that since these figures include physicians employed by the federal government, they necessarily show high percentages of physicians on full-time salaries.

From the foregoing, it can be seen that 72.7 per cent of all physicians receive all or part of their income from fees-for-service and 36.4 per cent receive all or part of their income from salaries. These percentages exceed 100 per cent inasmuch as a small percentage of physicians receive income from a combination of fee-for-service and salary arrangements.

Table 1 shows numbers of physicians in California, listed by Medical Society jurisdiction, along with per cent changes in the three classifications

**TABLE 1.—Number of Physicians in California, April, 1963, and Per Cent Changes Since April, 1961, by County Medical Society Jurisdiction**

County Medical Society Jurisdiction	Number of Physicians			Per Cent Change from 4/61		
	Total	Non-Federal*	Private Practice Only	Total	Non-Federal*	Private Practice Only
Alameda-Contra Costa .....	2,600	2,303	1,706	+ 8.9%	+ 9.0%	+ 7.2%
Butte-Glenn .....	135	134	113	+ 26.2	+ 25.2	+ 21.5
Fresno .....	482	457	364	+ 17.0	+ 16.3	+ 16.7
Humboldt-Del Norte .....	106	106	94	0.0	0.0	0.0
Imperial .....	61	54	51	0.0	- 3.6	- 1.9
Inyo-Mono .....	15	14	11	+ 25.0	+ 16.7	0.0
Kern .....	356	329	250	+ 16.0	+ 15.0	+ 8.7
Kings .....	50	39	37	+ 25.0	- 2.5	+ 5.7
Lassen-Plumas-Modoc-Sierra .....	32	29	28	- 3.0	- 3.3	0.0
Los Angeles .....	12,886	12,259	9,009	+ 19.4	+ 19.3	+ 18.9
Madera .....	29	28	22	+ 20.8	+ 16.7	0.0
Marin .....	381	355	272	+ 12.4	+ 17.2	+ 10.6
Mendocino-Lake .....	95	94	63	+ 9.2	+ 9.3	+ 3.3
Merced-Mariposa .....	80	63	56	+ 3.9	0.0	+ 5.7
Monterey .....	342	279	205	+ 11.0	+ 13.0	+ 6.2
Napa .....	185	177	77	+ 12.8	+ 18.0	+ 1.3
Orange .....	1,281	1,216	980	+ 40.5	+ 41.9	+ 41.4
Placer-Nevada .....	116	115	78	+ 22.1	+ 26.4	+ 11.4
Riverside .....	506	473	350	+ 28.8	+ 31.4	+ 25.4
Sacramento-Amador-El Dorado .....	790	752	611	+ 26.4	+ 27.9	+ 25.2
San Benito .....	12	12	9	- 7.7	- 7.7	- 30.8
San Bernardino .....	758	697	495	+ 20.1	+ 20.0	+ 22.5
San Diego .....	2,019	1,612	1,197	+ 16.4	+ 23.1	+ 16.4
San Francisco .....	3,427	2,995	1,727	+ 8.0	+ 5.2	+ 0.3
San Joaquin-Calaveras-Tuolumne .....	384	378	268	+ 14.3	+ 13.8	+ 9.4
San Luis Obispo .....	144	143	104	+ 17.1	+ 19.2	+ 18.2
San Mateo .....	775	754	600	+ 9.0	+ 11.4	+ 7.1
Santa Barbara .....	420	391	286	+ 14.8	+ 16.0	+ 16.7
Santa Clara .....	1,712	1,623	1,010	+ 25.0	+ 24.8	+ 14.8
Santa Cruz .....	170	168	139	+ 19.7	+ 23.5	+ 26.4
Shasta-Trinity .....	84	84	74	+ 10.5	+ 10.5	+ 5.7
Siskiyou .....	29	29	25	+ 3.6	+ 3.6	+ 8.7
Solano .....	217	135	108	+ 18.6	+ 5.5	+ 0.9
Sonoma .....	275	272	198	+ 12.2	+ 15.2	+ 11.9
Stanislaus .....	205	202	166	+ 1.5	+ 2.5	+ 1.2
Tehama .....	21	21	18	+ 5.0	+ 5.0	- 10.0
Tulare .....	167	165	138	+ 7.7	+ 7.8	+ 12.2
Ventura .....	332	312	213	+ 26.2	+ 27.3	+ 34.0
Yolo .....	65	64	53	+ 32.7	+ 30.6	+ 23.2
Yuba-Sutter-Colusa .....	93	79	69	+ 27.4	+ 25.4	+ 16.9
<b>TOTAL .....</b>	<b>31,837</b>	<b>29,412</b>	<b>21,274</b>	<b>+ 17.2</b>	<b>+ 17.5</b>	<b>+ 15.3</b>

\*A.M.A. Non-Federal Physician Classifications include the following: Full-Time Specialty Practice; Part-Time Specialty Practice; Intern; Resident or Fellow; Other Full-Time Staff In Hospital Service; Full-Time Medical School Faculty; Administrative Medicine; Laboratory Medicine; Preventive Medicine; Research; Retired; Not in Practice.

**TABLE 2.—Estimated Physician Population Ratios: (M.D.'s Only) California, Spring 1963**

Ratio	Statewide	Metropolitan Areas*	Non-Metropolitan Areas†
All Physicians/total population.....	181/100,000	190/100,000	123/100,000
Non-federal physicians/civilian population .....	171/100,000	NA	NA
All practicing physicians/total population‡.....	169/100,000	178/100,000	113/100,000
Non-federal practicing physicians/civilian population‡ .....	159/100,000	NA	NA

SOURCES: U.S. Bureau of Census, *Current Population Reports* (figures adjusted by Bureau of Research and Planning). California Economic Development Agency, *California Statistical Abstract* (figures adjusted). Special tabulations of physicians supplied to the Bureau of Research and Planning by A.M.A.

NA: Not Available.

\*Includes the following counties: Alameda, Contra Costa, Fresno, Kern, Los Angeles, Marin, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Barbara, Santa Clara, and Solano.

†Includes all other California counties.

‡Excludes Retired and Not in Practice.



indicated. Such changes have taken place during the past two-year period. It should be noted that part of the change is due to the Osteopathic merger which added over 2,000 physicians to the State total.

The figures indicate that the increase within the Private Practice sector of Medicine has not matched increases in other sectors. This is in part due to changes in the classification of some specialists, but primarily to a real increase in the number of non-federal physicians in fields other than private practice.

Table 2 shows some current physicians/population ratios. California's ratio is, as it has been in the past, higher than for the total United States. The comparable Non-Federal physicians/civilian population ratio for the U.S. is 132/100,000. It is of interest that there is a substantial difference in such ratios between urbanized and rural areas in the

State. This is partially due to the fact that the physician counts include many in training programs and in research, physicians who would naturally be found primarily in urbanized areas. It is also true that many of the more specialized physicians are generally confined to urban areas, hence raising such ratio.

Although the use of physician/population ratios to determine physician supply has been subject to some criticism, they are employed here in order to provide information of a comparative nature. In some respects they understate the medical manpower available to the community since physicians in federal service also provide services to segments of the civilian population, e.g., dependents of members of the armed forces, veterans for non-service connected disabilities in VA hospitals, etc.

693 Sutter Street, San Francisco, California 94102.

## Educational Programs in Nursing and Related Career Opportunities

THE MEMBERS of the A.M.A. Committee on Nursing believe it is fundamental to an understanding of nursing and its problems that physicians have some knowledge of the differences among educational programs in nursing and related career opportunities. Further, the members believe that such an understanding is a vital link in strengthening the relationships between the medical and nursing professions. Therefore the following report has been prepared to provide an overview of the diversification in nursing education.

There are presently wide varieties of educational programs in nursing from which a high school student can choose if she desires to become a nurse. There is also more than one avenue to follow if the professional student wishes to obtain a baccalaureate degree. The educational programs in higher education also vary, dependent on the objectives and the philosophy of the faculty and the university of which the nursing school is an integral part.

The table represents the types of programs available to potential or graduate nurses, or both, the educational facility in which the particular program is offered, and the related fees as well as the locus of responsibility for the fee.

A few experimental programs hold some promise for the future; for example, certain diploma schools have reduced the length of their programs to two years. In order to provide both supervised experience and some remuneration for the individual, the

schools have established internships which vary in length up to one year and provide a stipend. Some state laws require three years of educational preparation for admission to examinations for licensure. This stipulation prevents both experimentation with the length of diploma school programs and also the employment, in certain states, of graduates of associate degree programs. However, efforts are currently being made in several states to revise nurse practice acts in order that such experimentation will be possible.

One diploma school has arranged a plan whereby their students may elect to attend a nearby college at the same time they are attending the hospital school. One of the more interesting community plans is that of five schools pooling teaching facilities and sharing faculty for the first year of their diploma programs. Eventually they visualize one large, community, two- or three-year program which will use the clinical facilities and the dormitories of the five hospitals involved in the project as well as the educational facilities of a local community college.

Enlightened nurses, educators, and others recognize that the diversity and heterogeneity of nursing programs lead to misconceptions and misunderstanding on the part of patients, physicians, and potential nursing students and their parents. They realize that nursing education is presently in the process of maturation. As yet no one has come forward with a plan acceptable to all interested groups and one which will lead the way out of confusion. The American philosophy of education has always been that of diversity—not homogeneity. In keeping with this philosophy, the concern about the varieties of programs may not be germane. The challenge for

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Data on Programs in Nursing Education

Type of Program	Length of Program	Minimal Educational Requirements	Educational Setting	Administrative Control of School	Range of Average Tuition	Financial Responsibility	Certificate or Degree Conferred	Position for Which Eligible
Practical nurse	Approx 1 calendar yr	2 or more yr of high school, dependent on school requirements	Vocational high school, hospital, or junior college	Local school board or board of trustees of hospital	Free; up to \$800	Usually school subsidized; student purchases uniforms, books, etc.	Diploma or certificate—eligible to take examination for licensure as LPN	Bedside nursing under supervision of physician or professional nurse
Diploma (hospital)	27-36 mo	High school diploma	Hospital	Board of trustees of hospital, or independently incorporated yet associated with a particular hospital	\$106 to \$2,207 for 3 yr (median school \$826)	Student tuition, hospital and private funds	Diploma—eligible to take examination for licensure as RN	Bedside nursing
Associate degree	2 academic to 2 calendar yr	High school diploma	Community, or junior college	Local school board, or board of trustees of college	Minimal in state or community jr. col. up to \$2,000 per yr in private colleges	Student tuition, state or community sponsorship, and private funds	*Associate degree—eligible to take examination for licensure as RN	Bedside nursing
Basic or general baccalaureate	4 academic or 4 calendar yr. A few schools offer 5-yr courses	High school diploma	College or university	College or university	Varies in state university; up to \$2,000 or more per yr in private universities	Student tuition and college or university funds	Baccalaureate degree—eligible to take examination for licensure as RN	Bedside nursing, public health nursing (candidate for head nursing)
Baccalaureate for RN	2½-3 academic yr or more	High school diploma	College or university	College or university	Varies in state university; up to \$2,000 or more per yr in private universities	Student tuition and college or university funds	Baccalaureate degree (BS, BN, etc.)	Bedside nursing, public health nursing (candidate for head nursing)
Master's	1-2 yr	Baccalaureate degree	College or university	College or university	From \$2,200 to \$3,500 per yr	Student tuition (traineeships avail. to students from USPHS and others)	Master's degree (MS, MA, MEd, MPH)	Administrator, educator, clinical specialist
Doctoral	Varies with choice of major area; approx 3 yr or more	Baccalaureate and master's degrees	College or university	College or university	From \$2,200 to \$3,500 per yr	Student tuition (research fellowships avail. to students from USPHS and others)	Doctoral Degree in nursing or related field	Administrator, educator, investigator, and others

\* Some states do not permit graduates of these schools to qualify for RN licensure and practice.

nurses and others, including physicians, is to define the role of the professional nurse and the practical nurse, and to examine these roles and responsibilities in relation to the changing role of the physician in a modern scientific world. What kind of care do patients need and who can most effectively provide that care? When the answer to this question has been made explicit and has been agreed upon, it might be less difficult to predict the type of educational program in nursing essential to meet the needs of the sick of the nation, to teach preventive measures for maximum health and the like.

The A.M.A. Committee on Nursing respectfully suggests that each physician keep informed on trends in nursing in order that he can contribute wherever possible to the improvement of nursing education programs and to the clarification of the role of the nurse.

In conclusion, the Committee suggests that the Committee on Careers, National League for Nursing, 10 Columbus Circle, New York, be contacted for information on accreditation of professional schools of nursing and for careers material in general.



## Experience Under the M.A.A. Program in California, 1962\*

*A Report of the Bureau of Research and  
Planning, California Medical Association*

A RECENT REVIEW of the Medical Assistance for the Aged Program in California of services and expenditures for the year 1962 indicates that 27,539 different persons received inpatient benefits. The total amount of monies spent during the 1962 period was 46 million dollars or an average of \$1,670 per beneficiary by the end of December 1962. Many persons discharged from inpatient status were transferred to the old age security program, and their outpatient services were paid from public assistance medical care funds.

Although more than one-half of the persons provided with coverage under this program received services in nursing homes, over one-half of the total expenditures for care for patients was incurred for services received in hospitals: approximately 25 million dollars or 55 per cent of total expenditures under this program went for hospital care. However, 96,408 out of a total of 162,541 beneficiary months† covered payments for nursing home care, or 59 per cent of the total number of beneficiary months.

Over the 1962 calendar year, some 27,539 persons were admitted to the program and some 12,331 were discontinued under the program. Some of the major reasons for this discontinuance were death (65.6 per cent of the cases), transfer to O.A.S. (24.4 per cent of the cases), and other (10 per cent of the cases). Some of the other reasons include such categories as transference of the beneficiary to an ineligible medical facility, i.e., TB, V.A., or mental hospital; or ineligibility established because of

\*State of California Department of Social Welfare, Public Assistance Medical Care and Medical Assistance for the Aged, Services and Expenditures Report, Statistical Series MCI-18.

†Beneficiary months for the 1962 year includes an accumulated total number of persons for whom care payments were made during each month.

During 1962, 27,539 different persons received inpatient hospital and nursing home benefits under the M.A.A. program, California's implementation of the Kerr-Mills Act.

This report provides highlights of a recent report on expenditures, utilization, and characteristics of M.A.A. recipients in California.

excess income or property. In almost 5 per cent of the cases, or 50 per cent of the "other" category, the reason was unknown or not reported.

Some of the characteristics of the medical assistance for the aged intake group were: median age of 80 years; twice as many women as men; 98 per cent had been residents of the state for at least five years; for the most part the early intake persons consisted of large numbers of persons in county hospitals and nursing homes who had been receiving public assistance under O.A.S. During the first quarter, 77.4 per cent of all M.A.A. intakes were made up of persons on old age assistance, while in the fourth quarter of the calendar year, this dropped to 61.2 per cent.

Although a major portion (60 per cent) of the beneficiaries under this program had some of their income from a private or individual source, social welfare benefits were the major source of income.

In January 1963, Los Angeles had the largest number of certificate holders (5,248) and number of inpatient beneficiary months (5,932). The next county in terms of numbers was San Francisco with 1,901 certificate holders and 2,157 beneficiary months. The third largest county was Alameda with 1,209 certificate holders and 1,423 beneficiary months. In that month there was a total of 16,757 certificate holders who accounted for 18,231 beneficiary months in county hospitals, other hospitals, and nursing homes in the state.

California Medical Association, 693 Sutter Street, San Francisco, California 94102.



# LETTERS *to the Editor*

## **Hormonal Therapy of Disseminated Mammary Cancer**

ALTHOUGH THE HOUR IS LATE, the lead article in your April issue demands comment. The subject was the hormonal therapy of disseminated mammary carcinoma, and the authors were (and are) participants in the cooperative study under the Cancer Chemotherapy National Service Center of the National Cancer Institute, working at U.C. San Francisco. The opening statement referred to disseminated breast cancer as "a grave public health hazard," which made this reader wonder if the implication might be that the Department of Public Health should be in charge—after metastasis has occurred! (Calif. Med. 98:191, 1963.)

The study reported was said to provide "objective, controlled, randomized, reviewed data on anti-tumor efficacy" of additive hormones. This it did, but on samples of patients too small, in each instance, to be of any real significance. A total of 294 patients were divided into eight therapeutic groups, or an average of 36 each, for secondary treatment; for primary therapy, 144 patients were in four groups, averaging 38 each. Objectivity, randomization and prospectiveness will never erase the capricious biologic unpredictabilities of mammary carcinoma. The protean manifestations of this neoplasm (it would be preferable, probably, to say "these neoplasms") are such that a minimum sample for entirely reliable conclusions should be in the order of 300 to 500 cases. In earlier years, concerned with evaluation of hormonal agents of unknown capacity for tumor-suppression, we ran trials in groups of women of the size reported by these investigators, but only as a mechanism of indicating whether the agent was suitable for more extensive testing.

The objective of cooperative therapeutic trials is to obtain samples of significant size through the pooling of experience of the various institutions participating. This objective is observed with reverse english when, in a group of 21 patients, one regression is obtained but is dressed up by expressing the duration of regression in months  $\pm$  Standard Deviation.

The bias of the CCNSC group investigating the efficacy of hormonal therapy, in favor of androgenic

substances is apparent in this Institutional report of "randomized" selectivity. Of 144 women, the primary treatment was with androgens in 116, with an estrogen in 28; for secondary therapy, comparative figures are 139 and 46. Under "primary" treatment, a table lists 72 patients treated by testosterone propionate: in a tabular presentation of "secondary" therapy, section "H" is headed "primary androgen therapy" and in this sample there are 91 patients. In this "secondary" tabulation, of 139 androgen-treated, there were 27 regressions, for a 19 per cent response. In section "D" of the same table, only two women of 46 treated by estrogen exhibited regression, or 4 per cent. But in a footnote, it is stated "in our own series T.P. produced regressions in five of 25 women (20 per cent), and five of 28 patients responded to stilbestrol (18 per cent)."

The statement is made that combined data of eight institutions show no significant overall difference between the efficacy of testosterone propionate and diethylstilbestrol. Why, then, display the fragmentary bit of information referred to above, indicating a 4 per cent effectiveness for stilbestrol?

It would seem that no contributor to the CCNSC group is in good standing unless, in any publication, he takes a crack at the final report on the use of additive hormones from the Subcommittee on Breast & Genital Cancer, Committee on Research, A.M.A. (J.A.M.A., 172:1271, 1960). That report was retrospective and non-randomized, but the data on post-menopausal women were based on 420 treated by androgens, and 357 by estrogens as reported by responsible investigators, and the results subjected to more stringent criteria than those employed by the current CCNSC study. For examples, the latter effort does not include local recurrence as "soft tissue" disease; patients who show any pleural effusion are listed as "visceral" metastasis; patients who show regression of soft tissue disease but no regression of skeletal metastasis are reported as "responders" in the series of soft tissue metastasis. Thus, what is counted as regression in the CCNSC survey may not be apparent to the patient as such.

The customary indictment of the A.M.A. study is again cited by the paper under discussion: "... in that pioneer study the estrogen-treated women averaged 20 years older than those treated with andro-



gens," from which the blessings of prospective randomization become apparent. The entire A.M.A. series included premenopausal patients treated by androgens, as well as postmenopausal women treated both by androgens and estrogens, as cited above. The comparative efficacy of androgens and estrogens were calculated in 770 postmenopausal women by decades, both by chronologic and physiologic (years postmenopausal) criteria. With adequately sized samples, the effectiveness of the two types of additive hormones was similar through the fourth postmenopausal year, with less than 20 per cent achieving genuine, objective regression. Thereafter, although both androgens and estrogens became more effective with advancing age, the superiority of estrogens was apparent at every age-level. Overall, estrogens induced regression of disease in 36 per cent, and androgens in 21 per cent of postmenopausal women. Even if there were no difference, the distressing "side effects" of virilization would make the estrogens preferable.

The authors apparently refuse to concede any significance to a status of responsiveness following hormonal alterations, as compared to the nonresponsive patients. In most centers this is the basis for selection of patients for the major ablative procedures of hypophysectomy or adrenalectomy, although the latter is given no recognition in this article. Again, a cooperative study not under the aegis of CCNSC, involving 801 women treated by adrenalectomy, 390 by hypophysectomy, was retrospective and unrandomized, but—of more importance—the two series were shown to be biologically homogeneous (*Surg., Gynec. & Obst.*, 115:215, 1962). Clearly demonstrated was the usefulness of reserving these ablative procedures for those patients already proven to be responsive to other hormonal measures. But the UC S.F. authors regard such an approach as "misleadingly optimistic," preferring to "determine the usefulness of hypophysectomy for an unselected population"—of 27 patients.

IAN MACDONALD, M.D.

## The Author's Reply

THANK YOU for letting me see Dr. Ian Macdonald's letter on our article "Hormonal Treatment of Disseminated Cancer of the Female Breast," *Calif. Med.*, 98:189, April, 1963. His letter has reached me in Cambridge, England where I am completing a sabbatical year's work on a mechanism by which breast cancer damages bone. Under these circumstances, it is not feasible to consult my co-authors or my colleagues in the Cooperative Breast Cancer Study Group under whose aegis the study was made and the report appeared. Accordingly, my comments

reflect only my personal beliefs and are not necessarily those of the co-authors or of the Group.

Disseminated breast cancer is an important cause of morbidity and death and therefore a matter of public health concern. Naturally, I agree with Dr. Macdonald's implication that the proper time to cure the disease is before dissemination occurs. Unhappily, patients are often not seen until the disease is beyond surgical or roentgen eradication, as the quoted figures show. Some authorities go so far as to surmise that our best present treatment does not significantly alter the course of the disease. If true, this belief brings us to the biologic variability of the disease, a subject to which Dr. Macdonald has contributed significantly. He uses the term "biology" where others might say more simply that some tumors are indolent while others run a fulminating course. If this important variable were measurable, it could be randomized in our studies, just as we randomize the measurable variables of menopausal age and sites of metastasis. Our present scheme of randomization provides 12 categories. If only two types of biologic variation could be recognized, the number of categories would be doubled to 24. I agree that some of the visceral classifications are not comparable, e.g., a pleural effusion vs. brain metastases. Should we substitute pleural, lung, liver, brain and gastrointestinal metastases for visceral, increasing the variables fourfold and raising the number of categories to 96? As practical men, we are forced to compromise and trust that adequate numbers will result in comparable groups with respect to biologic variation and specific sites. Dr. Macdonald thinks our numbers too small. In fact, groups of 20 patients at our Clinic appear adequate, if only minimally so. Table 1 shows that the results of the completed University of California (San Francisco) studies closely parallel the combined national figures. Studies in 31 such Centers indicate that, using testosterone propionate 300 mg/week as a reference standard (with its 20 per cent regression rate), groups of 20 randomized patients are sufficient to show if a compound is significantly less effective than testosterone propionate at the 95 per cent confidence level. Nonetheless, I agree with Dr. Macdonald that I should like to see our groups expanded and one of the purposes of our report is to acquaint physicians with the program at our Breast Tumor Clinic in the hope that they will refer their patients to it.

Dr. Macdonald's criticism of statistical evaluation is, in my opinion, retrogressive. Surely it is mathematically impossible to calculate a standard deviation on one regression in any number of cases, and no deviation is reported in the group to which he appears to refer (Table 3, Group G.). We do report means and on larger groups qualify these with

standard deviations so that the reader may know their variability and approximate significance.

The word "bias" has connotations other than statistical and appears to convey a pejorative meaning in Dr. Macdonald's reference to the bulk of data on androgens in the National Study. Like Dr. Macdonald, I greatly dislike using androgens in these women because of the cruel masculinization conventional androgens produce. Incidentally, this is not, as stated, a "side effect" but the physiologic action of the male hormone. One of the valuable results of the CCNSC study is the identification of progressively less androgenic derivatives *without loss of antitumor efficacy*, by protocol studies of 2-alpha-methyldihydrotestosterone (and its propionate) and the completely non-androgenic compound, delta-one-testololactone. Would Dr. Macdonald have been willing to use estrogens, for which he seems to indicate a preference, as reference standards when the protocol was introduced, in view of the then general belief that estrogens accelerate disseminated breast cancer in women less than five years past the menopause? I would not, either ethically or forensically. The present cooperative study on stilbestrol vs. testosterone propionate has been set up in such a fashion that it should indicate whether estrogen can be used safely as a reference standard. Personally, I hope so. The non-androgenic delta-one-testololactone may also serve this function and, in fact, be preferable since it is less likely to cause nausea, vomiting, fluid retention, stress incontinence and uterine bleeding. I am sorry Dr. Macdonald confused the 18 per cent regressions from *primary* stilbestrol treatment with the 4 per cent figure for *secondary* treatment. The 18 per cent figure seems in accord with his bias for estrogens. It was to indicate our interpretation that stilbestrol and testosterone propionate have essentially similar antitumor efficacy that we presented what Dr. Macdonald calls our "fragmentary bit of information." I consider these data pertinent and the present cooperative study on the antitumor efficacy of stilbestrol vs. that of testosterone propionate essential in view of the lack of adequate "objective, controlled, randomized, reviewed data" on this subject.

I am truly sorry Dr. Macdonald thinks we "took a crack" at the A.M.A. study. We tried to indicate both here and in other publications our very great debt to that "pioneer study" (our expression). It taught us a lot: to set up prospective, randomized groups of comparable age and metastatic involvement, to include all patients entered into the study, to have extramural examiners review all films, photographs and measurements without knowledge of the treatment used, to use simple report forms, and, perhaps most important, that doctors genuinely in-

terested in obtaining statistically adequate data can do so by pooling their individual experience, which must, of course, be acquired under identical conditions (outlined by the protocol). But then Dr. Macdonald again becomes ambivalent and criticizes us for selecting only one of several possible criticisms of the A.M.A. report. Surely, if the estrogen-treated group is 20 years older than the androgen-treated group, and therefore much more likely to obtain regressions for that reason alone, it is not necessary to mention that half the androgens given were either less effective than testosterone propionate or given in less than the optimal dose of 300 mg a week, that half of the cases had to be dropped from the report, and that random statistics were applied to selected data. It was not and is not our purpose to publish a detailed analysis of the shortcomings of the A.M.A. report. After all, it was made very early in the history of cooperative studies and can properly, I believe, be characterized as a "pioneer study." I cannot agree that the criteria of that study, at least as published, were more stringent than those of the present, or CCNSC, study. The lack of randomization, which Dr. Macdonald appears to think unimportant in the A.M.A. study, means that incomparable groups were compared. The present protocol has its faults, but it does remarkably well, in my opinion, particularly when one considers that it is accepted by 31 groups of clinical investigators, a population not known for its acceptance of regimentation.

Why Dr. Macdonald introduces the matter of the comparative antitumor efficacy of adrenalectomy and of hypophysectomy to a discussion of our report is not clear to me. I agree that the report he cites shows that the two procedures yield comparable regression rates. But if the rates can be compared with each other, they cannot be applied to the large population of women with advanced breast cancer since the reported data are derived, for the most part, from the selected minority of patients whose disease had previously responded to castration or hormones. Our data seem to indicate that in unselected women with far advanced breast cancer, innocuous substitution therapy alone yields twice the regression rate of hypophysectomy. Under these circumstances, for my part, 27 hypophysectomies is quite enough. This study was, in my opinion, necessary to test the hypothesis Dr. Macdonald advances in view of selection in previous series. I am pleased to find that our data seem to support his belief, and I therefore agree that the proper place of ablative procedures is restricted to young women whose disease has responded favorably to castration and/or hormones, and is once again progressing.

GILBERT S. GORDAN, M.D., Ph.D.



# NEWS & NOTES

## NATIONAL • STATE • COUNTY

### ALAMEDA-CONTRA COSTA

**Dr. Louis E. Arnaud**, Walnut Creek, has been named a member of the board of directors of **Flying Physicians Association**. He will serve in the post for a period of three years.

Membership is open to all duly licensed physicians who are members of medical societies approved by the board of directors, and who hold valid pilot's certificates. At present 196 California physicians belong to the association.

### LOS ANGELES

Applications have been invited for National Institute of Mental Health **fellowship in child psychiatry** for pediatricians, to begin July 1, 1964. The appointment is for one year and the stipend is \$10,000 per annum. Applicants must be out of medical school at least five years, be board-certified or eligible, and be citizens of the United States.

The facilities used are those of the Los Angeles County General Hospital Child Psychiatry Service which has both an inpatient and outpatient service. The service is an integral part of the University of Southern California Department of Psychiatry.

**The deadline for applications** is November 1, 1963. They should be addressed to Joseph D. Teicher, M.D., Director, Children's Psychiatric Services, Los Angeles County General Hospital.

\* \* \*

The 1963-64 officers of the **Los Angeles Radiological Society**, who took office on September 1, are: President, Dr. Walter L. Stilson; vice-president, Dr. Saul Heiser; treasurer, Dr. Chester P. Bonoff; secretary, Dr. Bernard J. O'Loughlin.

\* \* \*

**The Sixteenth Annual Midwinter Radiological Conference**, sponsored by the Los Angeles Radiological Society, will be held at the Biltmore Hotel, Los Angeles, on Saturday and Sunday, February 1 and 2, 1964. **Guest speakers** are Doctors Ernest E. Aegerter, Philadelphia; A. N. Arneson, St. Louis; Roy Astley, Children's Hospital, Birmingham, England; Gwilym S. Lodwick, Columbia, Mo.; Hal Luke, Alfred Hospital, Victoria.

### SANTA CLARA

Stanford University will receive a \$500,000 grant from the **Gustavus and Louise Pfeiffer Research Foundation** to endow a teaching chair in the School of Medicine.

The Emma Pfeiffer Merner Professorship at Stanford is one of six to be set up by Pfeiffer Foundation grants totaling \$3,000,000 to help meet the crucial national need for first quality medical teaching. Other institutions benefiting are Harvard Medical School, the Menninger Foundation's School of Psychiatry at Topeka, and the University of Pennsylvania Medical School. The gift to Stanford marks the first time the Foundation has made so large a grant to higher education on the West Coast.

The new chair will honor the late Emma Louise Pfeiffer Merner, the sister of Gustavus A. Pfeiffer, industrialist and philanthropist of Iowa and New York.

### GENERAL

**Award of research fellowships** to two physicians who will carry out research projects on respiratory diseases in California medical schools has been announced by the American Thoracic Society. The two recipients are Dorian R. Faber, M.D., of Lehi, Utah, whose fellowship will support work in the Department of Pathology, University of California Medical School, Los Angeles; and Charles R. Olsen, M.D., of Santa Ana, whose project will be carried out in the Cardiovascular Research Institute, University of California Medical Center, San Francisco.

\* \* \*

The Fourteenth National County Medical Societies **Conference on Disaster Medical Care**, sponsored by the Council on National Security of the American Medical Association, will be held Saturday and Sunday, November 2-3, 1963, at the Pick-Congress Hotel, Chicago, Illinois. The conference will have workshops on the basic requisites to disaster planning and the resources available in the community in disaster situations.

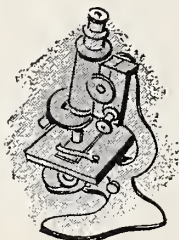
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Applications are now being accepted by Wyeth Laboratories for its seventh program of **pediatric residency fellowships**.

Eligible to apply to the fellowships are interns and young physicians who wish to specialize in pediatrics but cannot finance the two-year postgraduate training required for board certification.

Each fellowship provides \$4,800 for the two-year period. Fellows are free to choose their place of residency from among institutions accredited by the American Medical Association's Residency Review Committee of the Council on Medical Education and Hospitals, the American Board of Pediatrics, and the American Academy of Pediatrics.

Inquiries concerning the program should be directed to Dr. Philip S. Barba, University of Pennsylvania School of Medicine, Philadelphia 4.



# EDUCATION NOTICES

## MEETINGS AND COURSES

### COMMITTEE ON CONTINUING MEDICAL EDUCATION

THIS BULLETIN of the dates of continuing education programs and the meetings of various medical organizations in California is supplied by the Committee on Continuing Medical Education of the California Medical Association. In order that they may be listed here, please send communications relating to your future meetings or postgraduate courses to Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2.

## MEDICAL MEETINGS

### OCTOBER MEETINGS

Oct. 17—**San Diego Academy of Medicine** and the Tuberculosis and Health Association of San Diego County. Medical Symposium on Respiratory Diseases. El Cortez Hotel, San Diego. Thursday, 1:00 to 9:00 p.m. Contact: Harvey O. Randel, M.D., 3861 Front Street, San Diego.

Oct. 17-20—**Academy of Psychosomatic Medicine**. Sheraton-Palace Hotel, San Francisco. Contact: Klaus Berblinger, M.D., program chairman, Langley Porter Neuropsychiatric Institute, University of California School of Medicine, San Francisco 22.

Oct. 18—**Kern County General Hospital Annual Postgraduate Conference**. Bakersfield. Contact: George A. Paulsen, M.D., chairman, Kern County General Hospital, 1830 Flower Street, Bakersfield.

Oct. 18-19—**Kaiser Foundation Hospitals' Seventh Annual Symposium**. Fairmont Hotel, San Francisco. Friday, 7:30 p.m.-9:30 p.m., Saturday, 9:00 a.m.-5:00 p.m. Contact: Martin A. Shearn, M.D., Director of Medical Education, Kaiser Foundation Hospital, Oakland 11.

Oct. 20-23—**California Academy of General Practice Annual Scientific Assembly**. El Cortez Hotel, San Diego. Non-members \$10. Contact: Mr. William W. Rogers, executive secretary, 9 First Street, Room 900, San Francisco 5.

Oct. 23-24—**American Heart Association Council on Arteriosclerosis**. Annual Meeting. Biltmore Hotel, Los An-

geles. Non members \$15. Contact: Richard Hurley, M.D., 44 East 23rd Street, New York 10, N. Y.

Oct. 23-25—**California Hospital Association**. 1963 Annual Meeting. Yosemite National Park. Wednesday-Friday. Contact: California Hospital Association, 760 Market Street, San Francisco, EX 7-4730.

Oct. 24-26—**American Association for the Surgery of Trauma**. Mark Hopkins Hotel, San Francisco. Contact: William T. Fitts, Jr., M.D., secretary, 3400 Spruce Street, Philadelphia, Pennsylvania.

Oct. 25-27—**American Heart Association Annual Scientific Sessions**. Biltmore Hotel, Los Angeles. Members, medical students, house officers, research fellows, graduate students, U.S. Armed Forces—Free. Others, \$15. Contact: James McGraw, 44 E. 23rd Street, New York 10.

Oct. 27-Nov. 1—**American College of Surgeons Clinical Congress**. San Francisco. Contact: John Paul North, M.D., Director, American College of Surgeons, 40 East Erie, Chicago 11, Illinois.

Oct. 30-31—**California Conference of Local Health Officers**. Fresno Hacienda. Wednesday-Thursday. Contact: Acton W. Barnes, Assistant Chief, Administrative Division of Community Health Services, California State Dept. of Public Health, 2151 Berkeley Way, Berkeley 4.

Oct. 30-Nov. 2—**Nevada State Medical Association**. Joint scientific meeting with Rocky Mountain Medical Conference. The Dunes Hotel, Las Vegas. Wednesday-Saturday. \$20. Contact: Nelson B. Neff, executive secretary, 3660 Baker Lane, Reno, Nevada.

### NOVEMBER MEETINGS

Nov. 1-3—**California Society of Internal Medicine Annual Meeting**. El Mirador Hotel, Palm Springs. Contact: Robert L. Paver, M.D., secretary-treasurer, 350 Post Street, San Francisco.

Nov. 1-3—**Southern California Psychiatric Society Annual Fall Convention**. Vacation Village Hotel, San Diego. 8:30 a.m. Contact: Ralph M. Obler, M.D., chairman arrangements committee, 427 North Camden Drive, Beverly Hills.

Nov. 4-5—**Second Biennial Albert M. Snell Memorial Lectures**. "Esophagus—Forward Failure" (November 4) and "Esophagus—Backward Failure" (November 5). Palo Alto Medical Clinic auditorium, 904 Bryant Street. Monday-Tuesday. 8:00 p.m. Contact: Marcus A. Krupp, M.D., director, Palo Alto Medical Research Foundation, 860 Bryant Street, Palo Alto.

Nov. 5-13—**Ninth Congress of the Pan-Pacific Surgical Association**. Honolulu, Hawaii. Contact: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii.

Nov. 6-7—**Los Angeles Pediatric Society, 20th Annual Brennemann Memorial Lectures**. Ambassador Hotel, Los Angeles. Wednesday-Thursday. Contact: William D. Misbach, secretary, 17258 Ventura Blvd., Encino.

Nov. 7-10—**San Diego Chapter of the California Academy of General Practice**. Eighth Scientific Symposium. Flamingo Hotel, Las Vegas. Thursday-Sunday. Contact: Edwin N. Reithmayer, M.D., 1115 West Chase, El Cajon.



Nov. 8-10—**Forty First Medical Society** First Annual Convention. Riviera Hotel, Palm Springs. Contact: Mr. Don E. Rosenthal, Administrative Director, 4775 Santa Monica Boulevard, Los Angeles 29, California.

Nov. 10-13—**American Association for Automotive Medicine**, Annual Meeting and Seventh Stapp Symposium. University of California Residential Conference Center, Lake Arrowhead, California. Open to all who are interested in automotive medicine and traffic safety. Sunday-Thursday. Contact: S. M. Houston, Ph.D., Engineering Extension, Room 6266, Engineering Building II, UCLA, Los Angeles 90024.

Nov. 11-12—**Western Society for Pediatric Research**. Eleventh Annual Meeting. Ambassador Hotel and Childrens Hospital, Los Angeles. Monday-Tuesday. Contact: Denman Hammond, M.D., secretary-treasurer, Childrens Hospital of Los Angeles, 4570 Sunset Boulevard, Los Angeles.

Nov. 13—**American College of Physicians Southern California Region**, Annual Basic Science Lecture. Statler Hilton Hotel, Los Angeles. 6:30 p.m. Contact: George C. Griffith, M.D., 1136 West 6th Street, Los Angeles 17.

Nov. 15-16—**San Diego County General Hospital**. Seventeenth Annual Postgraduate Assembly. Friday-Saturday. Contact: Joseph M. Thompson, M.D., 2290 Sixth Avenue, San Diego.

Nov. 15-16—**California Nurses Association Institute** on the Medico-Legal Aspects of Nursing Practice. Jack Tar Hotel, San Francisco. Friday-Saturday. Contact: Marion McDermott, R.N., CNA, 185 Post Street, San Francisco, YUkon 6-2220.

#### DECEMBER MEETINGS

Dec. 2-6—**American College of Chest Physicians**, Postgraduate Course on Diseases of the Chest. Ambassador Hotel, Los Angeles. Monday-Friday. 9:00 a.m.-5:00 p.m. Contact: Alfred Goldman, M.D., program chairman, 416 N. Bedford Drive, Beverly Hills.

Dec. 2-6—**American College of Physicians** Postgraduate Course. "Psychiatry for the Internist," Phil R. Manning, M.D., and Allen J. Enelow, M.D., co-directors. Los Angeles County General Hospital. Monday-Friday. Members \$60. Non-members \$100. Contact: Edward C. Rosenow, Jr., M.D., executive director, 4200 Pine Street, Philadelphia.

Dec. 3-6—**Scripps Clinic and Research Foundation**. "Advances in Cardiovascular Diseases." La Jolla. Tuesday-Friday. \$100. Contact Harold Lowe, M.D., assistant program chairman, Scripps Clinic, La Jolla.

Dec. 5-7—**West Coast Allergy Society**, Annual Meeting. Las Vegas, Nevada. Thursday-Saturday. 9:30 a.m.-5:00 p.m. Non-members \$25.00. Contact: Jack M. Chesebro, executive secretary, 1818 S.E. Division, Portland 2, Oregon.

Dec. 6—**Southern California Public Health Association**. Annual Meeting. Huntington-Sheraton Hotel, Pasadena. Friday. 9:00 a.m.-4:30 p.m. Members \$1. Non-members \$2. Contact: Bernard Weintraub, secretary, Los Angeles City Health Dept., 111 East 1st Street, Los Angeles.

Dec. 13-15—**California Society of Pathologists** Annual Meeting. Riviera Hotel, Palm Springs. Friday-Sunday. Contact: W. K. Bullock, M.D., secretary, Los Angeles County Hospital, Dept. of Pathology, Los Angeles.

#### JANUARY MEETINGS

Jan. 6-10—**American College of Physicians** Postgraduate Course. "Nuclear Medicine and Radiation Biology," Joseph Ross, M.D., F.A.C.P., director. University of California Medical Center, Los Angeles. Monday-Friday. Members \$60. Non-members, \$100. Contact: Edward C. Rosenow, M.D., executive director, The American College of Physicians, 4200 Pine Street, Philadelphia.

Jan. 8.—**Los Angeles County Heart Association** 8th Annual Midwinter Symposium. Statler-Hilton Hotel, Los Angeles. Wednesday. 9:00 a.m.-4:00 p.m. Contact: Morton H. Maxwell, M.D., Los Angeles County Heart Association, 2405 West Eighth Street, Los Angeles 90057.

Jan. 9.—**Los Angeles Pediatric Society** Third Parmelee Lecture. Ambassador Hotel, 3400 Wilshire, Los Angeles. Thursday. 6:30 p.m. Contact: Wm. D. Misbach, M.D., vice president, 17258 Ventura Boulevard, Encino.

Jan. 18.—**Orange County Heart Association** 9th Annual Symposium on Heart Disease. Charter House Hotel, Anaheim. Saturday. All day. \$15, including lunch. Contact: Howard G. Buswell, executive director, Orange County Heart Association, P.O. Box 1704, Santa Ana.

Jan. 24.—**Fresno County Heart Association** Twelfth Annual Physicians' Cardiovascular Symposium. Fresno Elks Club, 5080 East Kings Canyon Road. Friday. 9:00 a.m.-5:00 p.m. \$10. Contact Frances Cuthbertson, executive director, Fresno County Heart Association, 1921 East Belmont Avenue, Fresno.

Jan. 25—**Childrens Hospital of Los Angeles** Second Clinical Conference in Pediatric Anesthesiology. Contact: M. Digby Leith, M.D., Childrens Hospital of Los Angeles, 4614 Sunset Boulevard, Los Angeles 27.

## POSTGRADUATE EDUCATION

### AUDIO-DIGEST FOUNDATION

**Audio-Digest Foundation** (a non-profit subsidiary of the California Medical Association) provides by subscription twice-a-month tape-recorded summaries of leading national meetings and authoritative surveys of current literature. Seven separate services in: General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, Anesthesiology, and Ophthalmology. A new Catalog of outstanding lectures and panel discussions in all areas of medical practice is also available. For information, write: Mr. Claron L. Oakley, Editor, 619 South Westlake Avenue, Los Angeles.

### STANFORD UNIVERSITY

Jan. 6-March 14—**Tropical Health**. An intensive ten-week course covering Public Health Administration, Tropical Diseases, Medical Specialties relevant to the practice of medicine in tropical and sub-tropical areas, combined with general review of specific topics in medicine and surgery. Registration limited to 10. Stanford University School of Medicine. Monday-Friday. 8 hours per day. \$470. \$100 deposit and brief curriculum vitae must accompany application for registration. Make check payable to STANFORD UNIVERSITY. Applicants will be notified of acceptance by November 15. Contact: Quentin M. Geiman, Ph.D., Dept. of Preventive Medicine, Stanford University School of Medicine, 300 Pasteur Drive, Palo Alto.

## UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Oct. 16-April 15, 1964—Basic Science Course in Ophthalmology. Wednesday evenings.\*†

Dec. 6-7—Management of Gynecologic and Urological Problems. Friday-Saturday.\*†

Feb. 19-29, 1964—Clinical Postgraduate Program in Mexico City.\*†

Mar. 7-28, 1964—Clinical Postgraduate Program in Egypt.\*†

April 11-May 2, 1964—Clinical Postgraduate Program in Hong Kong.\*†

Dates by Arrangement—Clinical Traineeship—Anatomy, Anesthesia, Dermatology, Pediatrics, Radioisotopes, Urology: 2 weeks, \$150; 4 weeks, \$250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, 478-9711, Ext. 2114.

## LOMA LINDA UNIVERSITY

As Arranged—Traineeships in clinical and other departments are available by arrangement with department chairmen of the Postgraduate Division. 80 hours minimum.

Anesthesia, 6 months. 250-300 hours. \$350.

Pulmonary Diseases—can be arranged.

Continuously—Illustrated Medical Lectures: 30-minute tape recordings and accompanying 35-mm filmstrip, 50 to 80 full-color pictures for screen, hand or desk viewer. Available individually or by subscription. 12 or 36 titles per year, all titles produced in one year in any chosen specialty. Projectors and viewers included in subscription plans. Contact: Loma Linda University, Illustrated Medical Lectures, Los Angeles 33.

For course information contact: W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles, California 90033, ANgelus 9-7241, Ext. 214.

## PRESBYTERIAN MEDICAL CENTER

Nov. 9—Arthritis. Saturday. 8 hours. \$25.

Nov. 15-16—Problem Cases in Clinical Ophthalmology. 16 hours. \$40. Contact: Eye Bank, Presbyterian Medical Center.

Dec. 7—Practical Therapy of Functional Illness. Saturday. 8 hours. \$25.

Jan. 11—Medical Emergencies. Saturday. 8 hours. \$25.

Jan. 25—Surgical Emergencies. Saturday. 8 hours. \$25.

For information contact: Arthur Selzer, M.D., chairman, Education Committee, Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15. WEst 1-8000.

## UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Oct. 19—Community Planning for Handicapped Children. Children's Hospital, San Francisco. Saturday. 7 hours. \$15.

Oct. 19-Nov. 23—Postgraduate Seminars in Clinical Sciences. Mercy Hospital, Sacramento. Saturdays. 9 hours. No fee.

Oct. 24-26—The Preclinical Basis of Gynecology. Thursday-Saturday. 15 hours. \$60.

Nov. 1-2—Graphic Methods in Cardiology. Friday-Saturday. 12 hours. \$40.

Nov. 9-11—Mental Health in the Classroom. Saturday-Monday. 18 hours. \$15.

Dec. 5-7—Symposium on Neuroectodermal Tumors and Melanomas of the Eye. Thursday-Saturday. 15 hours. \$75.

Dec. 6-7—Basic Electrocardiography. Franklin Hospital, San Francisco. Friday-Saturday. 12 hours. \$40.

Dec. 7-8—Psychiatric Perspectives in Medicine. Stockton State Hospital. Saturday-Sunday. 12 hours. \$15.

Dec. 13-14—Orthopedics: Problems of Soft Tissue Disease. Friday-Saturday. 12 hours. \$40.

Jan. 11—Adverse Reactions in Therapy. Children's Hospital, San Francisco. Saturday. 6 hours. \$15.

Jan. 24-26—Annual Symposium: Man and Civilization. Friday-Sunday. 18 hours. \$25.

Jan. 29-April 22—Practical Psychotherapy (continued). Langley Porter Neuropsychiatric Institute. Wednesdays. 11:00 a.m.-5:00 p.m. 60 hours, \$25.

Continuously—Courses presented by special arrangement: Principles and Clinical Uses of Radioisotopes (full time, one month).

For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MOntrose 4-3600, Ext. 179.

## UNIVERSITY OF SOUTHERN CALIFORNIA

Oct. 25—Scoliosis. Orthopaedic Hospital. Friday. 8:30 a.m.-5:00 p.m. 8 hours. \$25.

Oct. 28—Practical Office Dermatology. Los Angeles County Hospital, Outpatient Clinic. Monday. 8:30 a.m.-5:00 p.m. \$25. (Includes 2 coffee breaks and 2 luncheons.)

Nov. 2-3—Intensive Seminars in Psychiatric Problems Seen in Medical Practice. Santa Barbara. Saturday-Sunday. \$15.

Nov. 5-26—Medical Funduscopy. Los Angeles County Hospital, Ward 5000. Tuesdays. 7:30-9:30 p.m. \$37.50.

Nov. 7-8—Clinical Conferences and Case Presentations. Los Angeles County Hospital. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$25. (Includes 2 coffee breaks and 2 luncheons.)

Nov. 14-15—Sexual Problems Encountered in Medical Practice. Huntington Sheraton Hotel. Thursday-Friday. 8:30 a.m.-5:00 p.m. \$40. (Includes 2 coffee breaks and 2 luncheons.)

Dec. 2-6—Psychiatry for the Internist. Los Angeles County Hospital. Monday-Friday.\*†

Dec. 4-Feb. 19—Psychosomatic Case Conferences (Section 1). Los Angeles County Hospital. Wednesday. 2 hours. 10 sessions. \$25.

Dec. 4-Feb. 19—Psychosomatic Case Conferences (Section 2). Glendale Memorial Hospital. Wednesdays. 2 hours. 10 sessions. \$25.

\*Fee to be announced.

†Hours to be announced.



Dec. 13-15—**The Illness as Social Communication.** Palm Springs. Friday-Sunday. \$25.

Continuously—**Basic Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$100. Physicians may register at any time.

Continuously—**Advanced Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$85. Physicians may register at any time.

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## THE PHYSICIAN'S *Bookshelf*

**OPHTHALMIC PLASTIC SURGERY—Third Edition—**Sidney A. Fox, M.S. (Ophth.), M.D., F.A.C.S., Clinical Professor of Ophthalmology, New York University School of Medicine; Associate Attending Ophthalmologist, University Hospital; Associate Surgeon Ophthalmologist, Bellevue Hospital; Consultant Ophthalmologist, Bronx V. A. Hospital, Goldwater Memorial Hospital and Hospital for Joint Diseases, New York. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 493 pages, \$19.50.

The author is well known for his plastic surgery techniques. This book is the revised third edition. The book contains twenty-five chapters and four hundred eighty-five pages of text. It has been enlarged and many illustrations have been added.

An interesting approach is the more detailed assembling of historical data. This reinforces the observation that many techniques surprisingly were reported decades before the accepted originator published his report.

The present accepted techniques are well described and illustrated making this book a desirable additive to an Ophthalmology Library.

ALFRED R. ROBBINS, M.D.

\* \* \*

**THE WAKING BRAIN—Second Edition—**H. W. Magoun, Ph.D., Brain Research Institute and Department of Anatomy, University of California at Los Angeles; Veterans Administration Hospital, Long Beach, Calif. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Ill., 1963. 188 pages, \$7.75.

Doctor Magoun has simply and lucidly described and illustrated the structures and functions of the human nervous system in relation to behavior. This relatively short monograph unfolds the brain as the master central correlating and coordinating organ of human behavior. It is a must for the neurologist to broaden his interest in behavior, to the psychiatrist to root his understanding of personality problems to human neurobiology. To the physician in general it orients him to understand the daily human problems of his patients as the product of the influence of environment on the ever maturing and evolving nervous system.

\* \* \*

**SYNOPSIS OF PEDIATRICS—**James G. Hughes, B.A., M.D., Professor of Pediatrics and Chairman of the Department of Pediatrics, University of Tennessee College of Medicine, Memphis, Tenn.; Chief of the Pediatric Service, Frank T. Tohey Memorial Children's Hospital (City of Memphis Hospitals); Staff Member and former Chief of Staff of the Le Bonheur Children's Hospital, Memphis, Tenn. With the collaboration of twenty faculty members of the University of Tennessee College of Medicine. The C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Missouri, 1963. 1031 pages, illustrated, \$9.85.

This synopsis consists of 25 chapters and an appendix. Nine chapters, those on the scope of pediatrics, psychological aspects of childhood, immunization, history taking and examination, digestive system, respiratory tract, urinary tract, the nervous system and infectious diseases have been

written by Dr. Hughes. The remaining 16 chapters have been written by his colleagues at the University of Tennessee.

A synopsis is defined as "a general view" or a "summary." While the volume is just that, it is neither a comprehensive complete textbook nor a handbook small enough for the medical bag or pocket. It contains no references. The reviewer finds it difficult to see just what need this book will fill which has not already been met by pediatric texts now on the market which provide fuller coverage of the same material.

WILLIAM C. DEAMER, M.D.

\* \* \*

**MEDICAL GENETICS—**Widukind Lenz. Translated by Elisabeth F. Lanzl. The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Ill., 1963. 218 pages, \$6.50.

The author has written an introductory text on human genetics for the physician. He takes a middle road: being not so lucid as Stern, not so bristling with mathematics as Neel and Scull, not so clinical nor dogmatic as Hsia, and not so biochemically oriented as Sager and Ryan. The book was originally published in German in 1961, but pertinent discoveries in the past two years have been added.

After a general consideration of the scope of human genetics and its relation to other disciplines, the nature of the gene in its traditional Mendelian sense and vaguer modern biochemical sense is well explained. Single factor inheritance in man is presented under the usual categories of autosomal and sex-linked, dominant and recessive types. The theoretical patterns are described, and specific human diseases are used to show how analysis of pedigrees and population data is directed to discover these simple patterns. The concept of gene frequency is systematically employed. The necessary mathematical procedures are kept on the level of algebra and are well integrated into the text. The Hardy-Weinberg law of genetic equilibrium is either ignored or forgotten. It is of course introduced anonymously and in pieces. The law and the assumptions under which it holds are worth specific consideration in any introductory text because they are the heart of population genetics. The terms in the large genetic glossary are brought up at appropriate times and sharply defined.

Among the influences modifying gene frequency, mutation alone is stressed. Selection is briefly introduced in the section which covers the polymorphisms and heterozygote advantage. Point and gross mutations in the somatic and germ cells are described. The genetic effects of radiation are carefully presented in more than usual detail for texts, which are not addressed to physicians.

The last chapter deals with "composite gene effects" or polygenic inheritance. First the better worked out non-allelic gene interactions in the blood groups and hemoglobinopathies are presented. Penetrance and expressivity are discussed at length. Finally the controversial topic of the participation of hereditary factors in common diseases is



outlined and then examined by consideration of such diseases as hypertension and diabetes mellitus.

The translation reads smoothly. There are a few small inconsistencies in translation and infrequent lapses in idiom.

The author's eugenic proposals are humane and directed at individual circumstances rather than public policy. They amount to a moral mutation in the son of Fritz Lenz, a distinguished German geneticist and an advisor along with other distinguished German geneticists to Heinrich Himmler in the writing of the first racist laws of the Third Reich in 1933.

MALCOLM L. RUSK, M.D.

\* \* \*

**SYNAPTIC TRANSMISSION**—Hugh McLennan, Ph.D., Associate Professor of Physiology, Faculty of Medicine, The University of British Columbia, Vancouver, Canada. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1963. 134 pages, \$7.00.

In 1897 Sherrington coined the term "synapsis" to name the point of contact between neuronal processes. Doctor McLennan, in his monograph of 134 pages, has reviewed the main areas in which experimental investigations concerning the details of the operation of junctions between nerve cells and between neurones and effector cells have been undertaken. These areas of review are: the morphology of synapses, the concept of chemical transmission, synaptic events at motoneurones, synaptic events at other sites, including neuromuscular junctional transmission to striated muscle, transmission to vertebrate smooth muscle, vertebrate heart, giant synapse of the squid stellate ganglion, stretch receptor neurones of crayfish, neurones of the cerebral cortex, and others to draw attention to the very remarkable similarity and qualitative detail found at the synaptic junctions in a wide variety of situations; and a chapter on the "Transmitter substances and pharmacology of synapses."

This is an excellent, well-written, though not exhaustive review. Its value is further enhanced by a very good list of references.

DONALD MACRAE, M.D.

\* \* \*

**DISINFECTED MAIL**—K. F. Meyer, Ph.D., M.D., Director Emeritus George Williams Hooper Foundation and Professor Experimental Pathology, Emeritus, University of California School of Medicine, San Francisco, California, U.S.A.; in collaboration with the late Professor C. Ravasini, M.D., Trieste; Cecil G. Teall, M.D., Sutton Coldfield, England; Professor Marino Carnevale, Mauzan, Gap, France; Professor Dr. Kurt Wagener, Hannover, Germany; P. J. Drossos, Athens, Greece; Professor S. Petkovic, M.D., Belgrade, Yugoslavia; and Franz See, Vienna, Austria. The Gossip Printery, Inc., 116-118 E. 5th St., Holton, Kansas, 1962. 341 pages, \$12.00.

To all members of the medical profession around the world but especially to his colleagues in California, Karl F. Meyer epitomizes the scholarly medical scientist. His grasp of communicable diseases: at the patient's bedside, at the laboratory bench, and by their fusion in epidemiology, is truly unique. His qualities as a medical historian are equally famous. From time to time we have glimpsed his renown as a philatelist. Now, in *Disinfected Mail*, we see a fascinating and monumental synthesis of all of these amazing abilities of our revered colleague.

In his Foreword, Claude Dolman deftly describes *Disinfected Mail* as "a fascinating compendium of information on postal arrangements, disinfection procedures, and epidemic visitations." After a broad Meyerian historical introduction, the monograph proceeds with a description of the techniques of disinfection used in each country. It is superbly illustrated with magnificent reproductions which appear to be three dimensional. The systematic philatelic

classifications are presented in detail. As one would anticipate, our own San Francisco measures for disinfecting mail against plague are colorfully described.

*Disinfected Mail* is recommended to all professional people, be they physicians, historians, political scientists, microbiologists or philatelists, each of whom has kinship with Karl F. Meyer.

CHARLES E. SMITH, M.D.

\* \* \*

**A TEXTBOOK OF NEUROLOGY**—Third Edition—H. Houston Merritt, M.D., Professor of Neurology, Columbia University; Director of the Service of Neurology, Neurological Institute, Presbyterian Hospital; Vice President in Charge of Medical Affairs and Dean of the Faculty of Medicine, Columbia University. Lea & Febiger, 600 South Washington Square, Philadelphia 6, Pa., 1963. 803 pages, with 197 illustrations and 124 tables, \$12.50.

The previous two editions of this well-known textbook of neurology have been well received and this third edition has added to it some uncommon and more recently described disorders, such as McArdle's syndrome, Hartnup's disease, and paroxysmal paralytic myoglobinuria. One sees a change in concept of pathogenesis of disorders in the removal of diseases of muscles from the heading of "Degenerative Diseases" to the heading of "Metabolic Diseases." For this edition every chapter has been rewritten or revised. Its 803 pages form a handy practical text designed primarily for the use of students and practicing physicians. It is expected that this will continue to be a well-received short textbook of neurology. Its list of references after each chapter allows the student to go to source material for further elaboration.

DONALD MACRAE, M.D.

\* \* \*

**OCCUPATIONAL DISEASE IN CALIFORNIA ATTRIBUTED TO PESTICIDES AND OTHER AGRICULTURAL CHEMICALS—1961**—State of California, Department of Public Health, Bureau of Occupational Health, 2151 Berkeley Way, Berkeley 4, Calif. Paperbound, 28 pages. Complimentary copies are available upon request, within limitations of the supply, from the Bureau of Health Education, California State Department of Public Health, 2151 Berkeley Way, Berkeley 4, Calif.

Those physicians who shy away from the words *occupational disease* should not be misled by the above captioned title. This report should be a must reading for every physician in California. Although it deals largely with the agricultural worker, we physicians should realize that our wives, our gardeners, our neighbors and our non-agricultural patients are frequently exposed to pesticides of varying toxicity.

The first fifteen pages are descriptive and present such subjects as the hazards in connection with the use of pesticides and other agricultural chemicals; the incidence of poisoning; workers at risk; geographic distribution; chemical and clinical types of disease; industries involved; some case histories and citation of fatalities. The remaining thirteen pages consists of reference tables and data.

It is a well recognized fact that California has the best system of reporting and recording the incidence of occupational disease of any of the fifty states. But the Bureau of Occupational Health of our state recognizes that it is not perfect due to the failure of physicians to report an occupational disease. In this report under review it is pointed out that in reporting a poisoning from a pesticide, many physicians fail to identify the chemical involved.

He who reads this report cannot but help being proud of the efficiency of the Bureau of Occupational Health of the State Department of Public Health and its competent staff.

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as antihypertensive agent in hospital outpatients, J.A.M.A. 181:1043, Sept. 22, 1962. 6. Costello, A. C.: Clinical experience with the antihypertensive drug, mebutamate, M. Times. 91:53, Jan. 1963. 7. DuChes, J. W.: Clinical evaluation of a new antihypertensive drug acting in the CNS, Scientific Exhibit, American Medical Association, New York, June 25-30, 1961. 8. Duncan, G. G.: Essential hypertension, the dilemma it presents, Pennsylvania M. J. 64:1442, Nov. 1961. 9. Duncan, G. G.: Dilemmas in the management of essential hypertension, New York J. Med. 62:1573, May 15, 1962. 10. Fishback, D. B., and Castor, L. H.: Effective hypertension therapy with least side effects: Observations on mebutamate and hydrochlorothiazide, J. Am. Geriatrics Soc. 11:432, May 1963. 11. Gobel, W. K.: Clinical report on mebutamate—a new antihypertensive agent, North Carolina M. J. 23:349, Aug. 1962. 12. Hobbs, L. F.: Mebutamate, a new approach to the treatment of hypertension, Circulation (Pt. II). 24:956, Oct. 1961. 13. Holloman, J. L. S., Jr.: Treatment of hypertensive patients with mebutamate, a new antihypertensive drug, J. Nat. M. A. 54:94, Jan. 1962. 14. Kheim, T., and Kountz, W. B.: Treatment of hypertension in geriatric practice, New York J. Med. 62:1596, May 15, 1962. 15. Kolodny, A. L.: Technic of drug evaluation in hypertension, New York J. Med. 62:1585, May 15, 1962. 16. Leslie, C. H.: A new antihypertensive drug (mebutamate) in the treatment of refractory hypertension in geriatric patients: preliminary report, J. Am. Geriatrics Soc. 10:85, Jan. 1962. 17. Page, I. H., and Dustan, H. P.: Persistence of normal blood pressure after discontinuing treatment in hypertensive patients. Editorial, Circulation. 25:433, March 1962. 18. Shubin, H.: Evaluation of mebutamate (Capla), a new concept in hypertension therapy, Scientific Exhibit, American College of Cardiology, New York, May 17-20, 1961. 19. Snow, E. W.: Efficacy of mebutamate as a basic antihypertensive drug compared with previously prescribed antihypertensive drugs, Clin. Med., in press. 20. Turek, L. H.: Clinical evaluation of mebutamate, an antihypertensive agent: preliminary report, Clin. Med. 8:1335, July 1961.



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## Special Heart Screening Urged in Prenatal Check

Screening expectant mothers for heart disease by means of heart sound recordings was proposed as a possible way to reduce the greatest single cause of deaths associated with childbirth.

It is estimated that heart disease is responsible for between 1.5 to 3 per cent of deaths occurring during pregnancy, a Chicago research team reported in the July 27 *Journal of the American Medical Association*. Deaths associated with childbirth are five times more frequent among patients with heart disease than among normal mothers-to-be and represent 25 per cent of all deaths associated with childbirth, they said.

Rheumatic heart disease accounts for 95 per cent of heart disease in pregnancy and congenital malformations 2 per cent, the researchers said. Since these disorders produce abnormal heart sounds, they said, the sound recording technique, although not infallible, should detect practically all heart disease in expectant mothers.

Known as phonocardiography, the screening procedure consisted of recording stethoscopic tracings on an electromagnetic disc by means of an audio-visual heart sound recorder. Drs. Ephraim C. Meyer, Sheldon J. Slodki, and Irving Siegel said.

In a study involving 400 women seen at a prenatal clinic, the researchers compared the results of

200 examined with the phonocardiograph and 200 examined with the stethoscope.

Of the 200 sound recordings, 181 were technically adequate, they said. On the basis of these, 47 patients underwent a complete heart evaluation and 11 were found to have a functional or congenital heart disorder, they said.

By comparison, they said, no case of heart disease was discovered among the other group of 200 patients.

"Early diagnosis can be a significant contribution to the reduction of maternal morbidity and mortality caused by heart disease," the authors concluded. "Clinical evaluation of the cardiovascular system in the prenatal clinic can be improved and complemented by a screening program.

"We are of the opinion that phonocardiographic screening in pregnancy is a feasible, practical, and valid procedure, worthy of further and larger field studies."

The physicians are affiliated with Chicago Medical School and Mount Sinai Hospital.

HEARING LOSS IN UVEITIS—O. N. Maxwell. *Arch. Otolaryng.*, 78:138 (Aug.) 1963.

A transient neurosensory hearing loss in a case of Harada's disease is presented (uveitis, bilateral-detached retina, mild meningismus, hearing loss). The hearing loss, tinnitus, and dizziness seen in this disease seem to be due to a serious labyrinthitis induced by pigment destruction in the cochlea after autosensitization to the uveal pigment occurs.

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## Physical Activity Important In Treating Asthmatic Boys

Regular exercise and participation in the ordinary games of childhood are an important part of treating young boys with bronchial asthma, University of Texas researchers said recently.

A pilot study of the effect of exercise on asthmatic youngsters was reported by Thomas R. McElhenney, M.D., and Kay H. Petersen, Ph.D., Austin, Texas, in the July 13 *Journal of the American Medical Association*.

Twice a week for four months, 20 boys from 8 to 12 years old took an part in an activity program designed to increase gradually the time and effort required to develop strength, endurance and skill, and to provide individual instruction and encouragement to practice basic body skills, the authors said.

The activities included calisthenics, simple games, relays, and later competitive lead-up games to softball, basketball, and volleyball as well as tumbling, the rudiments of weight training and swimming, they said.

"The results of this four-month pilot study were very encouraging to the boys, their parents, and the authors as each of the 20 boys showed improvement, some more than others," they said.

The lung capacity of 14 boys was measured prior to and at the end of the program, they said. The

average increase in vital capacity was 18 per cent, they said.

There also was an approximate 30 per cent reduction in the number and severity of the asthmatic attacks and an equivalent diminution in the need for symptomatic drug therapy, they said.

One of the most satisfying aspects of the study was providing the chance for these boys to compete successfully, thereby transforming them from "watchers" to "doers," they said.

The authors recommended that school boards create remedial or adapted programs of physical education for all children in the community who are "below par," including asthmatic children.

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References: 1. Callaway, N. O.: Article to be published. 2. Raddin, J. B., and Dawell, L. B.: *Amer. J. Gastroent.*, 37:24-40 (January) 1962.

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Greenbaum <sup>2</sup>	24	23	0	1
Spielman <sup>3</sup>	20	14	6	0
Kessler <sup>4</sup>	13	11	0	2
	107	85	11	11**

\*\* (5 were "status" cases)

Gastric distress was reported in only one patient.

1. Schluger, J.; McGinn, J. T., and Burbank, B.: The Treatment of the Acute Asthmatic Attack with an Oral Alcohol-Water Solution of Theophylline (Elixophyllin), *Am. J. Med. Sc.*, 234:28 (July) 1957. 2. Greenbaum, J.: Clinical Evaluation of Elixophyllin and Choline Theophyllinate in the Management of Acute and Chronic Asthma, *Ann. Allergy*, 16:312 (May-June) 1958. 3. Spielman, A.: Comparative Effectiveness of an Alcohol-Water Solution of Theophylline (Elixophyllin), Alcohol-Water Solution and Theophylline Solution for the Oral Treatment of Acute Bronchial Asthma, *J. Allergy*, 30:35 (Jan.-Feb.) 1959. 4. Kessler, F.: Clinical Experience with an Oral, Rapidly-Acting, Theophylline Preparation, *Conn. S.M.J.*, 27:205 (Mar.) 1957.

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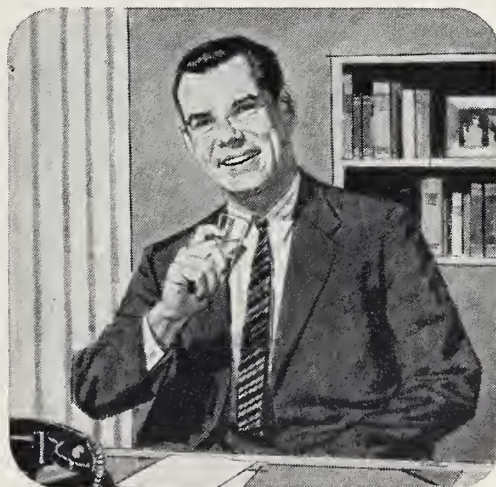
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## Vaccine Appears Safe for Some Allergic Children

Live measles vaccine apparently can be used with safety in immunizing many children previously denied this protection because of an allergy to the egg protein contained in the vaccine, a study indicated recently.

The use of any virus vaccine cultured in egg is generally avoided in persons allergic to egg protein.

Nine children allergic to egg were given a highly purified measles vaccine in a study reported by Drs. Peter B. Kamin, Bernard T. Fein and Howard A. Britton, San Antonio, Texas, in the August 24 *Journal of the American Medical Association*.

The children received the vaccine by injection and were also injected with modifying gamma globulin according to routine procedure used in previous field trials, the physicians said.

"No immediate or delayed reactions occurred which could be identified as allergic in nature," they said.

Previously, they said, all of these patients had been repeatedly challenged with whole egg, deliberately and inadvertently, and each time had experienced "intense reactions." None, however, had ever suffered an acute allergic reaction to egg, they said.

"The uneventful acceptance of the measles vaccine by this highly allergic group suggests that the majority of egg-allergic children need not be de-

prived of protection against a disease of such prolonged illness, and potentially grave complications as measles," the researchers concluded.

"This protection will be particularly possible if intense efforts are continued to reduce the content of all reaction-producing materials in virus vaccines and especially in measles vaccine.

"Lacking more information, we caution against use of the vaccine in children with acute allergic reactions to egg protein."

Studies show that less than 1 per cent of a random sample of normal children have positive skin tests for egg protein, the authors added, but safety of the measles vaccine in egg-allergic children would allow additional thousands of youngsters to be actively immunized against this disease.

The research group is affiliated with the pediatric allergy clinic, department of pediatrics, Robert B. Green Memorial Hospital.

PREANESTHETIC CHANGES IN BLOOD PRESSURE—N. M. Greene. *Anesth. Analg.*, 42:454 (July-Aug.) 1963.

Blood pressures in 2,100 patients were determined upon admission to the hospital and before and after preanesthetic medication. There was a significant decrease in blood pressure associated with the resting state. In normotensive patients blood pressure rose following premedication while it decreased further in hypertensive patients. There was no difference in blood pressure response related to type of premedication (barbiturate, narcotic, or barbiturate and narcotic).



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## REFERENCES AND REVIEWS

SPECIFICITY OF SKIN REACTIONS OF HUMANS TO NOCARDIA SENSITINS—L. F. Bojalil and M. Magnusson. Amer. Rev. Resp. Dis., 88:409 (Sept.) 1963.

*Nocardia brasiliensis* sensitin (a protein derivative of this organism) elicited strong reactions in 14 patients with mycetoma caused by the microorganisms and negative reactions (greater than or equal to 6 mm) in a group of healthy adults and in patients with various other diseases, including tuberculosis, when 0.2  $\mu$ g/0.1 ml were used. A ten times larger dose of the same preparation gave a positive reaction in a few tuberculin positive persons. *N. asteroides* sensitin (0.2  $\mu$ g) gave a reaction of 9 mm in one of the 14 patients with mycetoma and in 1 tuberculin-positive person, while a ten times larger dose gave fairly large reactions (presumably all cross reactions) in a large number of tuberculin positive persons. The results obtained with *N. brasiliensis* sensitin show that the reaction is fairly specific, and intradermal tests with 0.2  $\mu$ g/0.1 ml of *N. brasiliensis* sensitin may therefore be helpful in the diagnosis of mycetoma.

\* \* \*

GRANULOMATOUS ANGIITIS OF THE NERVOUS SYSTEM—G. N. Budzilovich, I. Feigin and H. Siegel. Arch. Path., 76:250 (Sept.) 1963.

Two cases of granulomatous angiitis of the nervous system are added to eight which were previously reported in detail. This disease affects predominantly the vessels of the brain, and is characterized by a granulomatous inflammation involving the adventitia, intima, or media of many arteries

and veins within the central nervous system, and some in the peripheral ganglia. The disease is progressive, probably fatal, and constitutes an entity to be distinguished from the other forms of vasculitis affecting the systemic vessels. Clinically, the manifestations are entirely neurologic, and indicate a diffuse disease of the nervous system.

\* \* \*

CELL ANTIGENS AND CELL SPECIALIZATION: I. A. STUDY OF BLOOD GROUP ANTIGENS ON NORMOBLASTS—J. J. Yunis and E. Yunis. Blood 22:53 (July) 1963.

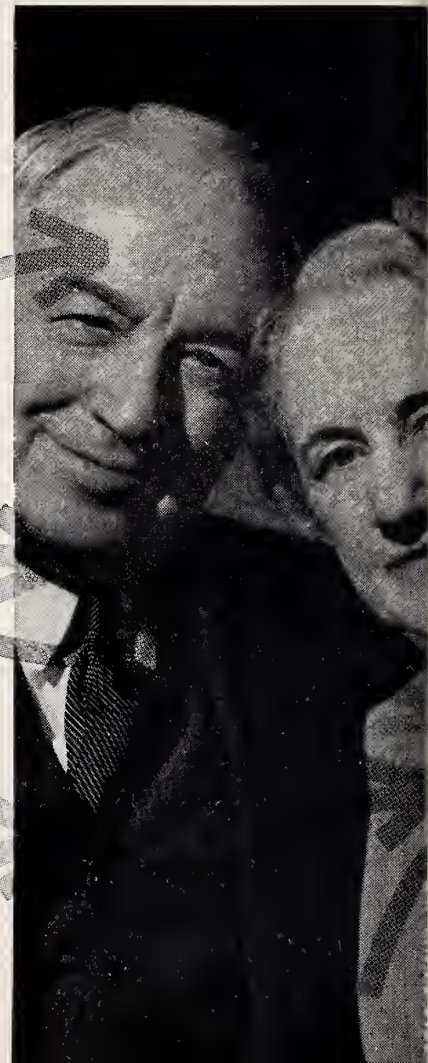
The present research was undertaken to determine whether the red blood cell antigens are present during erythropoiesis. Nucleated red cells were obtained from bone marrow of normal persons and separated by sedimentation. Four methods were used to identify the antigen receptors: (1) direct agglutination, (2) Coombs' mixed agglutination, (3) Jones' minor population, and (4) Coons' direct fluorescence antibody technique. These methods demonstrated that A antigen is present in A<sub>1</sub> and A<sub>2</sub> normoblasts, B antigen in B normoblasts, and H antigen in A<sub>2</sub> and O normoblasts. The antigen receptors were found in all types of normoblasts, including pronormoblasts and dividing normoblasts. This work describes the appearance of isoantigens during red cell development and indicates that red cell maturation is independent of the appearance of isoantigens on the cell.

\* \* \*

THORACIC SURGERY IN PATIENTS OVER 70—R. J. Wilder and R. H. Fishbein. Dis. Chest, 44:61 (July) 1963.

The authors have reviewed the records of all patients 70 years of age and older who underwent intrathoracic operations at the Johns Hopkins Hospital between the years 1952 and 1960. There were 60 patients in this group. One-third of the operations were performed for non-neoplastic disease.

**increases  
blood flow  
to the brain  
in the  
“senility syndrome”  
associated  
with  
cerebrovascular  
insufficiency**





The overall mortality rate was 18.3 per cent with a 30 per cent mortality rate following pneumonectomy, 10.5 per cent following lobectomy, and 13.3 per cent following exploratory thoracotomy for pulmonary carcinoma. Affections of the pulmonary tract constitute one of the major causes of post-operative morbidity and mortality. A plea is made for better evaluation of the respiratory status of patients in the geriatric age group.

\* \* \*

HEART DISEASE—G. James. Arch. Intern. Med., 112:262 (Aug.) 1963.

Progress against heart disease calls for activities beyond traditional medicine, including adjustment of environmental factors. Diet, work, and exercise habits are involved. Motivating the patient to follow a difficult regimen is often vital, yet the techniques for convincing are inadequate. Patchwork organization of services for delivering care keeps the patients from the treatment they need. More research is needed beyond the laboratory: on packaging of medical care, on public attitudes, and on patient motivations. Voluntary agencies can contribute to this aim.

\* \* \*

IDIOPATHIC HEMOCHROMATOSIS—R. A. MacDonald, Arch. Intern. Med., 112:184 (Aug.) 1963.

Idiopathic hemochromatosis appears to be an acquired rather than a genetic disease, a variant of "alcoholic" or nutritional cirrhosis, or of conditions leading to cirrhosis. It has been assumed that the diet of afflicted persons contains only normal amounts of iron. There is, however, a known association with the use of alcohol, and most cases have been reported from wine-consuming countries. There is no mucosal block to iron absorption, so that the iron of wine, in the amounts ingested in countries where hemochromatosis is common, is sufficient to account for the disease. The source of metals in wine is chiefly from the

equipment used in preparation. Other sources of dietary iron may similarly exist, and should be sought in patients with the disease, such as nonprescription medicines containing iron, iron cooking utensils, and "home-made" alcohols. Factors of diet, pancreatic disease, and hematologic disease may also contribute to excess iron absorption and tissue deposition.

\* \* \*

PYROGENS FROM HISTORICAL VIEWPOINT—F. B. Seibert. Transfusion, 3:245 (July-Aug.) 1963.

Bacterial contamination as a cause of pyrogenic reactions after transfusions is discussed. Methods of preparing non-pyrogenic distilled water, proteins, and other solutions are reviewed, and the setting up of pyrogen standards is described. Standard methods of testing for pyrogens, their chemical nature, source, biological effects, and relationship to endogenous pyrogen are also discussed.

\* \* \*

ACQUIRED AORTIC VALVULAR STENOSIS: ITS DIAGNOSIS BY CONVENTIONAL RADIOLOGICAL STUDY—J. S. Lehman, H. Florence, A. P. Schimert, and G. C. Evans. Radiology, 81:24 (July) 1963.

A series of 107 surgically verified cases of relatively "pure" acquired aortic valvular stenosis is analyzed on the basis of conventional film studies. Cardiac enlargement, with a sabot configuration, localized dilatation of the middle third of the ascending aorta, and aortic valvular calcification are present in a high proportion of cases. In a number of cases for which the left ventricular-aortic systolic pressure gradient and estimates of the aortic valve area were available, these were found to bear no relationship to cardiac size, left ventricular size, or poststenotic dilatation of the ascending aorta as shown on the conventional roentgenograms.

Inadequate cerebral blood flow—often due to cerebral arteriosclerosis—may result in the "senility syndrome" with its pattern of mental confusion, memory lapses, depression, fatigue, apathy and behavior problems.<sup>1-3</sup>

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In patients with cerebrovascular insufficiency, Eisenberg<sup>4</sup> measured a 43 per cent increase in blood flow in the brain following administration of Arlidin (nylidrin HCl) orally for more than two weeks beginning with a dosage of 12 mg. t.i.d. and increasing to 18 mg. t.i.d. There was a decrease in cerebral vascular resistance in most instances.

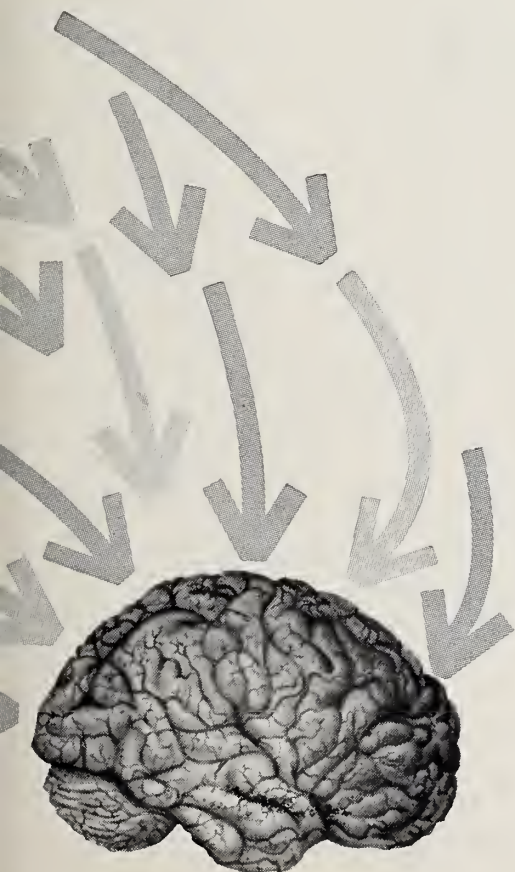
Winsor and associates<sup>3</sup> found Arlidin (nylidrin HCl) "of particular value clinically in relieving some of the symptoms of cerebral vascular insufficiency (vertigo, lightheadedness, mental confusion, diplopia)."

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**REFERENCES:** 1. Madow, L.: Penn. M. J. 62-861, June 1959. 2. Stieglitz, E. J.: Geriatric Medicine, ed. 2, Philadelphia, Saunders, 1949 p. 274. 3. Winsor, T., et al.: Amer. J. Med. Sciences 239:594, May 1960. 4. Eisenberg, S.: ibid, July 1960.

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CAUTION: Careful supervision of dosage is advised, especially for patients with a known propensity for taking excessive quantities of drugs. Excessive and prolonged use of glutethimide in susceptible persons, for example, alcoholics, former addicts, and other severe psychoneurotics, has sometimes resulted in dependence and withdrawal reactions. In those cases, dosage should be reduced gradually to lessen the likelihood of withdrawal reactions such as nausea, abdominal discomfort, tremors, or convulsions.

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### A.M.A. to Hold First Meeting On Pollution in May

The American Medical Association has announced that it will hold its first Congress on Environmental Health Problems in Chicago May 1-2, 1964.

Contamination of air, soil, and water, and its effects on health will be discussed by nationally recognized scientists and community leaders. Topics will include air and water pollution, and pesticide and radiological hazards.

About 400 persons, mostly practicing physicians, are expected to attend.

"Our purpose is to update physicians on these problems which are complex, but pertinent to the practice of private medicine, and to encourage physicians to provide leadership in community prevention programs," Dr. Millard B. Bethel, director of the A.M.A. Department of Environmental Health, said.

"With this conference we hope to launch the first stage of a responsible medical attack on these problems. Our purpose is not only to safeguard, but to promote the maximum health of our expanding population, to treat our environment as an ecological, architectural whole."

The A.M.A. department, activated in July of 1962, is the first national agency to attack the problem of the overall effect of chemicals on man and his environment.

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION as required by the Act of October 23, 1962: Section 4369, Title 39, United States Code, of CALIFORNIA MEDICINE, published monthly at San Francisco, California, for August, 1963.

1. Location of office of publication and of general business office of publisher: 693 Sutter St., San Francisco, Calif. 94102.

2. Publisher: California Medical Association, 693 Sutter St., San Francisco; Editor, Dwight L. Wilbur, M.D., 693 Sutter St., San Francisco; Managing Editor and Business Manager, John Hunton, 693 Sutter St., San Francisco.

3. Owner: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.) California Medical Association, 693 Sutter St., San Francisco, Calif. 94102 (an unincorporated association).

4. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: There are no bondholders, mortgagees, or other security holders.

5. Paragraphs 3 and 4 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation. The name of the person or corporation for whom such trustee is acting, also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner. Names and address of individuals who are stockholders of a corporation which itself is a stockholder or holder of bonds, mortgages, or other securities of the publishing corporation have been included in paragraphs 3 and 4 and when the interests of such individuals are equivalent to 1 percent or more of the total amount of the stock or securities of the publishing corporation.

6. Average number of copies each issue during preceding 12 months: Total, 22,822; Paid circulation to term subscribers by mail, carrier delivery or by other means, 22,171; sales through agents, news dealers, or otherwise, 3; free distribution (including samples) by mail, carrier delivery, or by other means, 294; total number of copies distributed, 22,468. Single issue nearest to filing date, August, 1963: Total, 22,982; Paid circulation to term subscribers by mail, carrier delivery or by other means, 22,468; sales through agents, news dealers, or otherwise, 1; free distribution (including samples) by mail, carrier delivery, or by other means, 290; total number of copies distributed, 22,759.



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## Kidney Successfully Transplanted To Unrelated Recipient

The transplantation of a kidney from a deceased donor to an unrelated 24-year-old man was termed successful recently by a Boston medical team.

The recipient is alive and able to work as a full time accountant 16 months after the April 5, 1962, operation.

The case represents the longest recorded life-sustaining survival of a kidney transplanted from a person after death to an unrelated recipient with chronic kidney disease, Drs. J. P. Merrill, J. E. Murray, F. J. Takacs, E. B. Hager, R. E. Wilson, and G. J. Dammin reported in the August 3 *Journal of the American Medical Association*.

The same group reported the first successful kidney transplant between living persons other than identical twins in 1960.

The difficulty in transplanting kidneys between unrelated persons is the development of an immunogenic response in the recipient which causes his body to reject the graft.

In this latest transplantation, the researchers said, the recipient on several occasions showed obvious evidence of beginning to reject the grafted kidney. On all these occasions, they said, the rejection was reversed or alleviated by administration of adrenal cortical steroids, drugs which perform like the hormones secreted by the outer layer of the adrenal

gland and which suppress the body's immunity, or defense, mechanism.

Although the prolonged survival of this kidney represents an encouraging facet of the work in human kidney transplantation, they said, it does not necessarily signify a specific and universal approach to the solution of the problem.

"Most important, we believe, is the strong evidence furthering our previous contention that tolerance to a human renal homograft is not an all-or-none phenomenon; that partial tolerance may be attained and abortive rejection of the graft may be reversed with further immunosuppressive therapy," they said.

Ideally, they said, a donor would be selected whose tissue antigens closely match those of the recipient to reduce the chance of the recipient developing antibodies to new antigens and minimize the amount and possibly the duration of drug therapy to suppress the immunogenic response.

The authors pointed out that a test has been devised for determining whether two persons carry similar antigens and it also has been shown that antigenic compatibility may be shared by individuals who are not related.

In the operation described, they said, the donor was chosen purely by chance. However, they said, the possibility exists that the donor and recipient shared a number of potent antigens and that this

*Recent reports suggest...insulin and sulfonylureas may accelerate lipogenesis, fat accumulation, weight gain; thus appear to aggravate obesity in diabetics<sup>1-5</sup>...serum "insulin" levels are often elevated in obese diabetics<sup>2,3,6</sup>...DBI (phenformin HCl) reduces high blood sugars, lowers elevated "insulin" levels, tends to reduce body weight toward normal.<sup>1,3,7-9</sup>*

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factor favored survival of the graft.

Another factor in the success of the transplant may have been the patient's long-standing kidney failure, they said. Studies have shown that nitrogen retention resulting from chronic kidney failure favors tolerance to a graft possibly because it promotes production of adrenal cortical hormones by the body, they said.

The kidney function of the patient, whose own kidneys were removed after the transplant, has been relatively stable for the last five months but is considered poor, the researchers added. He also has anemia which makes transfusions necessary, they said.

The authors are affiliated with the departments of medicine, surgery, and pathology, Peter Bent Brigham Hospital and Harvard Medical School.

### **Gamma Globulin Urged To Prevent Hepatitis**

The routine use of gamma globulin to prevent serum hepatitis following blood transfusions was suggested recently in view of the high fatality rate from this disease and the expectation of a more ample supply of gamma globulin.

Serum hepatitis is a liver disease caused by a virus transmitted by transfused blood or unsterile instruments.

Blood transfusions cause death in approximately 1 of every 150 transfusions in persons over 40 years of age as a result of serum hepatitis, according to an editorial in the September 28 *Journal of the American Medical Association*.

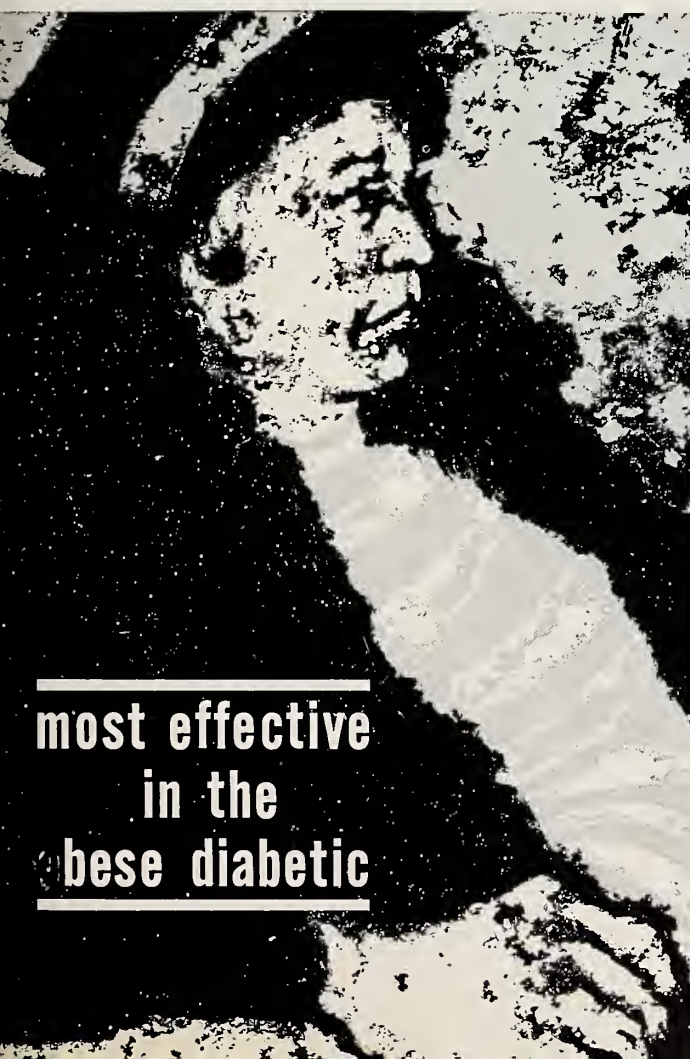
"Since this is the age group to which most blood transfusions are given, and since many hundreds are given daily, such a high fatality rate becomes a major problem," it said.

It has been shown that in about three-fourths of those receiving transfusions two subsequent doses of gamma globulin can prevent serum hepatitis, the editorial pointed out.

Up to now, it said, gamma globulin has not been widely advocated for such protection because supplies were limited.

However, the editorial said, increasing evidence that measles vaccines will lead to successful immunization indicates that less gamma globulin will be required to treat that disease. There is also increasing evidence of the safety and feasibility of a donor giving blood more frequently which should increase the supply of gamma globulin, a blood plasma protein, it said.

"In view of these developments and the vital importance of the problem in persons over 40 years of age, the routine administration of gamma globulin after blood transfusion should be given serious consideration," the editorial concluded.



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administered to ketoacidosis-resistant diabetics requiring hypoglycemic therapy: A. act to reduce high blood sugar without increasing fat synthesis or weight gain as insulin and sulfonylureas tend to do. B. do not increase already elevated endogenous insulin levels; may, indeed, act to restore more normal insulin levels. C. favor reduction of weight towards normal.

Insulin is still the essential hypoglycemic agent for the ketoacidosis-prone diabetic. However, in the ketoacidosis-resistant obese diabetic phenformin appears to be the hypoglycemic of choice to help avoid weight gain or reduce adiposity, a factor tending to make control more difficult and to increase the likelihood of complications.

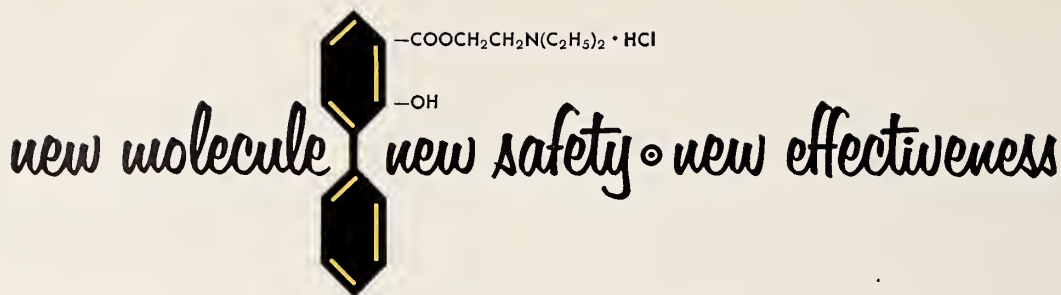
**Summary:** Indicated in stable adult diabetes, sulfonylurea failures and unstable diabetes. Gastrointestinal side effects occurring more often at higher dosage levels abate promptly upon dosage reduction or temporary withdrawal. Occasionally an insulin-dependent patient will show "starvation" ketosis (acetoneuria without hyperglycemia) which must be differentiated from "insulin-lack" ketosis, and treated accordingly. Use with caution in severe liver disease. Not recommended without insulin in acute complications (acidosis, coma, infections, gangrene, surgery). Consult product brochure for full information.

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## New Test Can Detect Early Kidney Cancer

A new laboratory test for detecting cancer of the kidney before symptoms become apparent was reported in the September 7 *Journal of the American Medical Association*.

The test is based on the measurement of the activity of an enzyme, alkaline phosphatase, through urinalysis, according to Elias Amador, M.D., Theodore S. Zimmerman, A.B., and Warren E. C. Wacker, M.D., Harvard Medical School, Boston.

The report follows by a year the finding of Dr. Wacker and Harvard associate Lionel E. Dorfman, M.D., that an elevated level of another enzyme, lactic dehydrogenase (LDH), in the urine can indicate cancers of either the kidney or bladder.

Measurements of LDH activity are uniquely suitable as a screening test for the detection of cancers and other serious diseases of the urinary tract, the Harvard group said in the latest report. In those patients found to have elevated LDH activity, the alkaline phosphatase activity may then be used to aid in pinpointing the affected area, they said.

Increased alkaline phosphatase activities have not been found in patients with localized cancers or other diseases of the bladder, they said. Therefore, a higher than normal level of both LDH and alkaline phosphatase activity, along with x-ray evidence of a kidney mass, is proposed for the diagnosis of cancer of the kidney, they said.

Alkaline phosphatase, distributed throughout the cells and fluids of the body, is especially abundant in the kidney tubules, the authors said. Its activity has been shown in previous studies to be altered markedly by diseases of the kidney, they said.

Although simultaneous elevation of the activity of these two enzymes have been seen in patients with other kidney diseases, they said, these conditions can be easily differentiated from cancer by simple methods.

"There is a clear-cut need to increase the diagnostic potential of adenocarcinomas of the kidney," the researchers said.

These cancers do not cause any apparent symptoms in one-third to one-half of patients, they said. Symptoms occur late in the course of the disease, they said, and one to two years often elapse between the onset of symptoms and the establishment of the correct diagnosis.

"It is clear from the data presented . . . that the measurements of alkaline phosphatase and LDH activities in urine are precise, accurate, and sensitive diagnostic aids," the authors said. "Furthermore, elevation of these urinary enzyme activities is not dependent on the existence of symptoms or signs of urinary tract carcinoma.

"The occurrence of elevated urinary enzyme activities in patients with asymptomatic carcinomas permits prompt diagnosis, thereby improving the probability of a permanent cure."

(Continued on Page 37)

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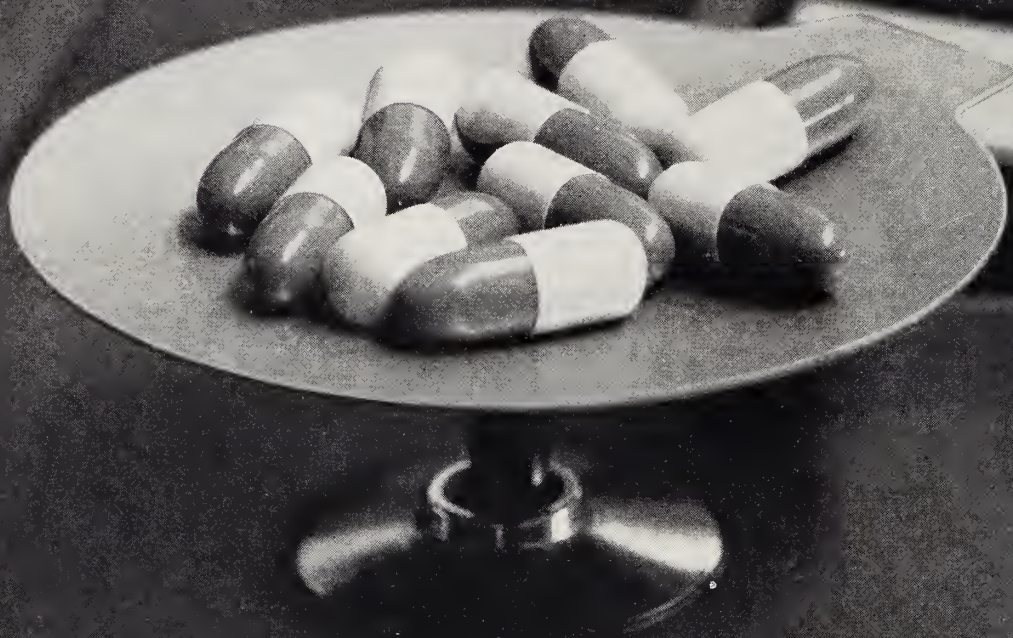
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**References:** 1. Raddin, J. B., and Dowell, L. B.: *Amer. J. Gastroent.* 37:24-40 (January) 1962. 2. Calloway, N. O.: Article to be published. 3. Reichert, J. L.: *Pediat. Clin. N. Amer.* 2:527-538 (May) 1955. 4. Hootnick, H. L.: *J. Amer. Geriat. Soc.* 4:1021-1030 (October) 1956.

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# California M E D I C I N E

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## The California Medical Malpractice Picture

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• The California physician's steadily increasing risk of legal liability poses a basic question: Will he ultimately wind up a guarantor of results, carrying a great burden of malpractice insurance in order to pay for every untoward result of medical treatment? This alarming prospect is the result of many years of judicial (and therefore lay) speculation on the legal significance of the injury which brings the patient into court. Does it look as though this injury probably is associated with medical negligence? If so, let the doctor explain. And the explanation must be very complete.

The legal instrument which thus reverses the traditional requirements of proof, permitting the patient-plaintiff to remain silent while the doctor-defendant must exculpate himself, is an evidentiary doctrine called *res ipsa loquitur*—the thing speaks for itself.

The application of the doctrine relieves the patient-plaintiff of the necessity of producing an expert witness to point the finger and say, "The medical conduct that produced this injury was sub-standard." The increased use of the doctrine reflects a judicial conviction that in many parts of California physicians refuse to testify for the patient-plaintiff regardless of the merit to his case.

A recent California Supreme Court decision suggests that the Court is not unaware of the adverse social consequences implicit in the irrational expansion of the physician's risk of legal liability. But a reversal of this trend would seem to be contingent on positive conduct from the medical profession in California—conduct demonstrating that no meritorious patient-plaintiff will fail in his malpractice lawsuit for lack of an expert medical witness.

THE PATIENT-PLAINTIFF SUES the doctor-defendant.\* For the sake of argument let's assume that the patient's suit is meritorious. Can he win?

Even today, in many states, the answer is more probably no than yes. Why? Because, traditional law requires that the patient-plaintiff bring forth a medical witness to support his case—to say, "As a physician familiar with this area of medicine, I can say that the medical conduct of the doctor-defendant was sub-standard." And often the patient-plaintiff, even if his suit has merit, is unable to find a competent physician willing to testify for him, and against a fellow physician.

To overcome this barrier created by traditional

law, many states have developed rules of evidence which depart from traditional legal procedure and give assistance to the patient-plaintiff. From the patient's standpoint the most effective piece of assistance is the doctrine of *res ipsa loquitur*. This doctrine is the subject of this article. Among the several states which recognize *res ipsa loquitur*, none has applied it so liberally as California.†

As long ago as 1916<sup>‡</sup> the California Supreme

†Another type of assistance consists in permitting the patient-plaintiff to question the doctor-defendant as though he were the plaintiff's own witness; and some states have greatly expanded the concept of "informed consent." This latter device eliminates the need for a medical witness, since the only fact at issue is: Was the patient given enough information about the medical procedure so that he could give an informed consent to its being performed? California recognizes this rule, as do all states, but only a few states have expanded it. California is not one of them.

‡Where the patient awoke following abdominal surgery to discover a burn on the lower leg.

\*To clarify the sometimes confusing terms *plaintiff* and *defendant*, these denotations will be used frequently.

Submitted April 23, 1963.



Court decided to rearrange the traditional requirements of proof in those medical malpractice cases where the injury to the patient-plaintiff was especially flagrant in its implication of negligence on the doctor's part. In such cases, where the injury spoke for itself, there was held to be no need for an expert medical witness to support the patient-plaintiff's position. Once the plaintiff showed that this injury was caused by the doctor-defendant, and that the patient himself had no hand in bringing it about, the patient-plaintiff could keep silent and it was up to the doctor-defendant to convince the jury that the injury was not negligently caused. Thus, the doctor-defendant was liable until he proved non-liability.

This doctrine, termed *res ipsa loquitur* ("the thing speaks for itself"), has come a long way in the 47 years since 1916. As discussed below, more and more types of injuries have been held to speak strongly enough of negligence so that the doctrine could be applied. Especially in the past ten years the crucial question for those concerned with medical malpractice law in California has been, How far will this doctrine of *res ipsa loquitur* be stretched? What untoward result of medical treatment will next be regarded by the California Supreme Court as indicative of negligent medical management? How long will the California Supreme Court ignore the fact that a considerable variety of medical accidents are a calculated risk of medical treatment? In short, will the California physician ultimately wind up a guarantor of results, carrying an enormous burden of malpractice insurance in order to pay for every untoward result of medical treatment?

A review of the California medical malpractice picture is especially appropriate at this time because of a California Supreme Court decision in June 1962. In this case, *Siverson vs. Weber*,<sup>6</sup> the California Supreme Court seems to indicate that it is ready to cut away at the overexpanded doctrine of *res ipsa loquitur*. Perhaps the doctrine will ultimately be reduced to the rational role it once held in California medical malpractice law. However, it seems likely that there is a contingency to such future action by the California Supreme Court. It is the author's opinion that this contingency is the clear indication, *by conduct*, from California physicians that henceforth no meritorious patient-plaintiff will find justice denied him because he cannot obtain a competent medical witness to appear on his behalf in a malpractice suit.

Physicians are not in a difficult position to understand thoroughly the details of the alarming trend in California medical malpractice law and to perceive the very encouraging significance of the *Siverson* decision. Procedure and evidentiary law is, for the most part, a *method* of dealing with facts. The facts in question here are medical ones. Legal rules

applicable to medical malpractice law are not difficult. It is the medical facts which, for lay persons, present great difficulty.

It is the purpose of this article to explain the relevant law and then to show how application of the law to specific medical malpractice cases has resulted in the grotesque medical malpractice situation that has been created in California. When the basic problem which created this situation is understood, namely the reluctance of doctors to testify against a colleague in a malpractice case, the importance of the decision in *Siverson vs. Weber* can be appreciated. In a word, the California Supreme Court is willing to be persuaded that doctors no longer will countenance the old "conspiracy of silence." Is the Supreme Court correct? If not, then the case of *Siverson vs. Weber* will probably turn out to be merely a pause in the steady advance of *res ipsa loquitur*—a doctrine which can hamper drastically California medical practice.

Individual medical malpractice cases will form the essential portion of this article. However, before taking up these cases, there are a few preliminary questions which must be answered in order to lay the groundwork for the discussion.

What does malpractice mean? Malpractice means nothing more than negligence. And, in legal terminology, negligence means carelessness plus injury. One is careless when he is not careful. The term "careful" presupposes a comparison. Do people behaving *reasonably* perform a particular act in this manner, or do they perform this act more carefully?

A doctor is careless when his medical conduct (an operation, a diagnosis, a selection of treatment) is carried out with less skill and care than is *standard* in the medical community.

Note that the definition of negligence includes carelessness *plus injury*. The most careless of treatments does not constitute actionable negligence where there is no accompanying injury. Also, the doctor who is careful and yet injures a patient is not negligent.

AMONG physicians, a very common misunderstanding about malpractice law involves this word *careful*. The thoroughly expert physician who has had a bad result because his conduct did not live up to *his own* high standards nevertheless has not been legally negligent if his conduct conformed to the *average* for skill and care in the medical community. If he is a specialist, then his conduct is measured against the average of specialists in the community. So it can be seen that a doctor might feel himself morally liable for an injury to a patient where there is, in fact, no legal liability. Conversely, a physician who is incompetent to perform a certain

medical act might do it with all the care of which he is capable and yet be liable for a bad result because his best performance (in that particular medical situation) did not add up to the average performance of his colleagues.

What happens when the injured patient takes the doctor into court? The patient-plaintiff must not only show that he is hurt, but he must connect the doctor-defendant to his injury. If he cannot show some *fact* from which reasonable persons could conclude that (a) the doctor was careless, and (b) this carelessness resulted in an injury to the patient, then the doctor need not say a word—the trial is over; the doctor gets a “non-suit” because the patient-plaintiff has failed to meet his “burden of proof.” To put it another way, the patient-plaintiff must start the ball rolling (in legal terminology he must present a *prima facie* case) before the doctor-defendant need present *any portion of his case at all*. A *prima facie* case exists where the patient-plaintiff has presented some fact, however small, from which (in the absence of any proof by the doctor-defendant) *reasonable persons* (the jury) *might reasonably* conclude that the doctor-defendant was negligent.

What is there about the process of *proving* medical negligence which tends to protect the doctor? Courts recognize that doctors share an unfamiliar body of knowledge. So, as a rule, it is required that only other doctors may pass on the significance of the facts which the patient-plaintiff presents. But what if the patient-plaintiff cannot find a doctor to act as his medical witness and to assert that the doctor-defendant was negligent? In such a case the patient-plaintiff has, in the past, simply been out of luck. He is prevented from presenting his *prima facie* case and so the doctor-defendant gets a non-suit.

It is plain that these facts (the patient-plaintiff's burden of proof, the fact that the doctor-defendant may remain silent, and the reluctance of doctors to assist the patient-plaintiff by testifying against a colleague) have, in the past, tended to protect any physician who is sued for negligence, whether he has been negligent or not.

What happened when the California courts sought to counteract what has been termed a “conspiracy of silence?” Directly as a result of the feeling that doctors were evading justice, California courts have tried to help the patient-plaintiff meet his burden of proof without the use of a doctor-witness. The courts reasoned in this manner: If the patient-plaintiff has no doctor to testify for him, he can't win. But what if the fact which the patient-plaintiff points to as indicative of the doctor's negligence (the hemostat left in the abdomen, the paralyzed shoulder after abdominal operation) speaks so strongly of carelessness

that even a lay person could say the doctor-defendant was *probably* negligent? In such cases, where the medical fact situation seems to speak loudly of negligence, California courts hold that the patient-plaintiff need only show that his injury occurred.\* Then it is up to the doctor-defendant to *prove* that he did not negligently cause that injury. In legal terms, the California courts are looking to circumstantial evidence in order to establish the patient-plaintiff's *prima facie* case (i.e., meet his burden of proof).

WHAT is circumstantial evidence? Boot prints in mud suggest that a man walked by that way even though no one saw him. A dead man with a knife in his back probably was murdered even though no one saw the assailant. A child with jam all over his face has probably been eating jam. Thus, certain facts lead strongly to given conclusions, even though those facts in themselves do not completely preclude a different conclusion. An ape could have been wearing the boots, the man could have backed into the knife in a suicide attempt, and the jam on the child's face could have been smeared there by his brother. But from ordinary human experience each of these explanations seems unlikely.

This process of reasoning is known as drawing a conclusion from circumstantial evidence. Similarly, if a patient awakens from an abdominal operation with a burn on his leg, or discovers weeks later that he has a sponge in the abdominal cavity, or awakens from an appendectomy to discover his arm is paralyzed, it is likely that someone dealt carelessly with him. In each case one can think of innocent (i.e., not careless) explanations of the injury. But these explanations are so much less likely than those which look to careless causation that the courts have felt it just to require the doctor-defendant rather than the patient-plaintiff to do the explaining. Where logically applied, the “doctrine” of *res ipsa loquitur* is a rule of circumstantial evidence.

#### California Courts and Res Ipsa Loquitur

Once the preceding material is understood the rest is quite simple. The central problem of modern medical malpractice law in California can be expressed in one question: How far will California courts go in asserting that a given accident, that is, an untoward result of medical treatment, is circumstantial evidence of negligence on the part of the doctor-defendant?

\*The patient-plaintiff must also show that he did not contribute to his own injury and that the doctor-defendant was in control of the instrumentality that injured him. The former requirement is seldom of concern, since the patient is usually passive, and the latter requirement is not taken literally; it is enough that the circumstances of the accident indicate that the doctor-defendant might be responsible for any negligence connected with it.



In answering this question one must first trace the progress of the courts in their increasingly haphazard application of *res ipsa loquitur*.

In 1916 the California Supreme Court first applied *res ipsa loquitur* in a medical malpractice case.<sup>5</sup> In this case a patient was burned on the leg while unconscious following appendectomy. The shape of the burned area strongly suggested that a too-hot bed warmer had been placed next to her leg, but no one would admit putting it there. The Supreme Court stated, in language that stands out in this confused area of law, "Negligence like any other fact can be proved by circumstantial evidence."

Nothing was heard of the doctrine for more than ten years, and then in the late 1920's and in the 1930's it was applied in several medical malpractice decisions. These cases involved such accidents as the leaving of foreign bodies in the abdomen following surgical operation, the burning of a patient in the course of diagnostic x-ray studies, and the knocking out of a healthy tooth by a tonsil gag. In 1944 *res ipsa loquitur* was applied in a case involving brachial palsy following an abdominal operation. The court emphasized that the injury to a remote part of the body, which was not involved in the operative procedure, was an event which does not ordinarily happen unless someone had been careless. In other words, it was an event which was circumstantial evidence of negligence.

In 1952 an anesthetic explosion was held to be circumstantial evidence of negligence and in 1953 the Supreme Court held that *res ipsa loquitur* was applicable in a case involving death during the course of a tonsillectomy. This death apparently was due to the anesthetic, which was ether, and the Supreme Court laid heavy emphasis on the rarity of such an untoward result of ether anesthesia for tonsillectomy. In 1955 the doctrine was applied to paraplegia resulting from a spinal anesthetic. Again the Supreme Court emphasized how rare is this complication of spinal anesthesia. The decisions also stressed the common use of these medical procedures.

**B**EFORE discussing the further progress in the development of *res ipsa loquitur*, the rationale of the court's application of the doctrine to these cases should be examined. Clearly there is reliance on what might be termed a "rarity principle." The court's reasoning can be expressed as a syllogism:

*Major premise:* Certain types of treatment are very common in medical practice.

*Minor premise:* It is rare that trouble develops following such treatments.

*Conclusion:* If trouble does follow such treatments an inference arises that someone has

been negligent; therefore *res ipsa loquitur* is applicable.

Obviously the Supreme Court is ignoring the calculated risk which is inherent in most medical procedures. It is inevitable that even with greater than average care some patients will die during minor operations and in some cord damage will develop, with resultant paraplegia, during carefully administered spinal anesthesia. Perhaps it is logical to say that leaving a foreign body in the abdomen is almost never a calculated risk of surgical operation, although where an operation is done as a desperate emergency it is conceivable that proper care under all of the circumstances might allow of such an eventuality. Perhaps also injury to a remote portion of the body during surgical treatment is never a non-negligently caused complication. Regardless of how one may feel on these particular points, the courts' reasoning on the rarity principle, as demonstrated in the further extension of *res ipsa loquitur*, shows how irrational the concept has become.

In 1956 a decision was handed down in the case of a patient who had suffered damage to his radial nerve following the injection of a vitamin solution into the deltoid muscle. The District Court of Appeal\* held that the happening of this untoward event inferred that "the injection was negligently given or there was something wrong with the serum." In other words, the court felt that this injury was circumstantial evidence of negligence, so *res ipsa loquitur* was applied. Great emphasis was placed on the rarity of nerve injury incident to intramuscular injections. Although the court stated, "It is a matter of common knowledge among laymen that injections in the muscles of the arm, as well as other portions of the body, do not cause trouble unless unskillfully done or there is something wrong with the serum," the context of the case clearly qualified this statement: first, to apply only to intramuscular injections and second, to apply only to nerve injuries resulting from such injections.

It was not until April of 1959 that the full impact of the harmful potential in *res ipsa loquitur* became apparent. Until this time the application of the doctrine had been quite limited in scope, applying as it did to relatively uncommon injuries and mainly affecting the doctor in the operating room. In *Wolfsmith vs. Marsh*,<sup>8</sup> however, the California Supreme Court dealt with the sort of difficult facts which traditionally make bad law.

Mrs. Wolfsmith, an overweight woman, was placed in the hospital for the purpose of having a basal metabolism test. Because she was very nervous, and in order to obtain a basal reading, an anes-

\*Following trial, the party who loses may appeal to the District Court of Appeal. The party who loses in that appeal has the opportunity to appeal to the Supreme Court of California. There is no higher court of appeal within the state.

tist administered sodium pentothal. Because of her obesity the only superficial vein available was a varicose vein in the right popliteal space. Thrombosis of the vein resulted from the injection and later there was ulceration at this site. Ultimately there was considerable disability with thrombophlebitis and lymphangitis. Causalgia was also a complication.

In reversing a non-suit for the doctor-defendant the Supreme Court of California decided that the patient-plaintiff should be given the benefit of the doctrine of *res ipsa loquitur*. The court said, "It is a matter of common knowledge among laymen that injections in the arm, as well as other portions of the body, do not ordinarily cause trouble unless unskillfully done or there is something wrong with the serum." This language is borrowed directly from the radial nerve injury case noted above, but the qualifications of the holding in that case are ignored. By this decision the State Supreme Court placed a burden of exculpation on any doctor-defendant who is sued by a patient-plaintiff who was injured by any sort of injection.

Recall that once the *res ipsa loquitur* doctrine is applied the patient-plaintiff may remain silent—now it is the doctor-defendant who must do the explaining. This brings up one of the most crucial points concerning *res ipsa loquitur*: Since the doctor-defendant must explain away the injury, what sort of explanation is required of him? In 1947 the California Supreme Court<sup>2</sup> emphasized that where *res ipsa loquitur* is applied, the patient-plaintiff must win his suit unless the jury finds that the doctor-defendant has made "a showing either (1) of a satisfactory explanation of the accident, that is, an affirmative showing of a definite cause for the accident, in which cause no element of negligence on the part of the defendant inheres, or (2) of such care in all possible respects as necessarily to lead to the conclusion that the accident could not have happened from want of care, but must have been due to some unpreventable cause, although the exact cause is unknown. In the latter case, inasmuch as the process of reasoning is one of exclusion, the care shown must be satisfactory in the sense that it covers all causes which due care on the part of the defendant might have prevented."

THE above observation by the California Supreme Court applies to the sort of evidence which the jury must have before it can exculpate the doctor-defendant. However, it is widely felt that where the doctor-defendant is not negligent, his best chance for obtaining justice is to present evidence which the judge will determine could not rationally be disbelieved and thus the case is not permitted to go to

the jury—the doctor-defendant winning by a non-suit.

So the next question is: Where the doctrine of *res ipsa loquitur* is applied, can the doctor-defendant overcome the inference before the case gets to the jury—can he still obtain a non-suit? In 1956 the California Supreme Court asserted<sup>3</sup> that in order to rebut the inference of *res ipsa loquitur* and obtain a non-suit the doctor-defendant must present evidence which is "clear, positive, uncontradicted and of such a nature that it cannot rationally be disbelieved."

In view of the above points of law, and returning to *Wolfsmith vs. Marsh* (the vein injection case), what is the practical effect on the doctor-defendant of applying *res ipsa loquitur* to every situation where there is "trouble" following any sort of injection? Assuming that the physician made the appropriate tests and took the appropriate safeguards before giving a particular injection, in many cases the only statement he can make with regard to explaining away some untoward event following an injection is that he took all reasonable precautions and that accidents following this type of injection are inevitable in a small proportion of cases. Is this enough of an explanation to (1) meet the inference of *res ipsa loquitur* and obtain a non-suit for the doctor, or (2) permit the jury, if it wishes, to decide for the doctor-defendant? Although at present the issue is not perfectly clear, it is quite possible that such an explanation would not win a non-suit for the physician, and it is conceivable that, at least in those cases where accidents attend simple and common injections, the court would not permit the jury to decide in favor of the doctor-defendant who presented no more than this explanation. At present there are no cases resolving these questions.

In its dramatic holding that it is a matter of common knowledge among laymen that "injections in the arm, as well as other portions of the body, do not ordinarily cause trouble unless unskillfully done or there is something wrong with the serum," the Supreme Court in the *Wolfsmith* case is applying a rarity principle. The common use of injections of all sorts is noted by the Court. It is assumed that trouble rarely results from any injection. So it is concluded that lay persons can infer a negligent cause where trouble follows any injection. Keeping in mind the legal effect on the doctor-defendant where the patient-plaintiff is given the benefit of the doctrine of *res ipsa loquitur*, a few examples will illustrate the drastic effect of the court's decision and pinpoint the dilemma in which the doctor is placed when he contemplates any therapeutic or diagnostic procedure which involves injections into the patient's body.



Thus, there is a well recognized calculated risk of adverse reactions to penicillin, streptomycin, intravenous antibiotics, immunizations of all sorts, blood transfusions, procaine, x-ray dye studies, injections into the spinal canal, injections of gold for rheumatoid arthritis, and injections of cortisone directly into the joint. These examples are only a sampling of the important medical procedures which involve injections into the body. Many of them are potentially life-saving. In their aggregate they constitute a significant proportion of medical practice. These risks cannot be brought below an irreducible minimum regardless of the precautions taken—the calculated risk is simply one of the many variables which the doctor's judgment takes into account before he prescribes treatment involving injections or, for that matter, any other type of treatment.

So it is plain that the holding in the Wolfsmith case, to the effect that "trouble" following injections raises an inference of negligence, is an irrational one. This points up an intangible, but vitally important, problem raised by the steadily expanding scope of *res ipsa loquitur*. Few critical physicians would disagree on the underlying requirement for good medical practice—the doctor's freedom to make choices with only medical considerations in mind. These choices are frequently difficult, and choices which do not constitute negligence may occasionally lead to serious disability or death. The possibility for such an unfavorable outcome of a given choice is faced by most doctors almost daily. If the medical community develops a feeling that it is being subject to unwarranted risks of legal liability, this harassment cannot but interfere with medical decision-making. The effect of scrutiny for the consequences of real negligence may improve medical practice by encouraging diligence and discouraging treatment which is beyond the doctor's capacity. It is the court's unwarranted meddling in the doctor's decision-making which is bound to have a detrimental effect.

The California Supreme Court's decision in the Wolfsmith case was a unanimous one. This was the first California Supreme Court decision in this area of medical law since 1955. The next supreme court decision on this subject was in *Siverson vs. Weber* in June of 1962. This decision was awaited with considerable interest. Would the Supreme Court expand the scope of *res ipsa loquitur*, or would there be a cutting back of the scope of the doctrine, especially with regard to the rarity principle as illustrated by the Wolfsmith case?

The Siverson decision drew the line with regard to a further extension of *res ipsa loquitur* in one area of medical practice—surgical operations. And

the opinion contains dicta which suggest that the Supreme Court may in future cases substantially alter its previous stand on the rarity principle.

The medical facts in the Siverson case are not complex. Mrs. Siverson had a vesicovaginal fistula following hysterectomy. In approving a verdict for the doctor-defendant the California Supreme Court made the following points:

1. "The medical witnesses agreed that the exact cause of a fistula appearing several days after a hysterectomy cannot ordinarily be ascertained and that they could not determine the cause of the fistula involved here. Fistulas may occur even though the surgeon has exercised the care and skill generally possessed and exercised by reputable gynecologists in the community, and the development of a fistula, although rare, is considered an inherent risk of the operation."

In a word, the California Supreme Court accepted the expert testimony to the effect that this untoward result is a calculated risk of hysterectomy.

2. Because there is a calculated risk of this injury, the court adds, "It is obvious that neither the cause of the patient's fistula nor the question whether, in the light of past experience, it was probably the result of negligence by the defendants is a matter of common knowledge among laymen."

In other words, because there is a calculated risk of this injury, *res ipsa loquitur* cannot be applied.

3. Then the court reemphasized that the rarity principle does not overbalance the calculated risk principle where rare accidents result from surgical operation: "The fact that a particular injury suffered by a patient as a result of an operation is something that rarely occurs does not in itself prove that the injury was probably caused by the negligence of those in charge of the operation. (Citations.) Language to the contrary in *Valentine vs. Kaiser Foundation Hospitals*, 194 Cal. App. 282 (15 Cal. Repr. 26), and *MacDonald vs. Foster Memorial Hospital*,<sup>4</sup> 170 Cal. App. 85, 105 (338 P. 607), is disapproved."

4. The social policy underlying the court's decision is expressed by these words: "To permit an inference of negligence under the doctrine of *res ipsa loquitur* solely because an uncommon complication develops would place too great a burden upon the medical profession and might result in an undesirable limitation on the use of operations or new procedures involving an inherent risk even when due care is used."

The essence of this opinion seems to be that in the future, rare accidents incident to "operations or

new procedures" will not, solely because of their rarity, cause California courts to apply *res ipsa loquitur*, provided that a calculated risk of the particular injury can be shown. With regard to operations no amplification is necessary. But what is the area of medical practice encompassed by the words "new procedures"? Clearly this has an impact on the Wolfsmith decision. Arteriography, most arterial and venous catheterizations, and injection techniques incident to cardiac x-ray visualization are examples of what the Supreme Court probably would consider new procedures. These "injections into the body" can be followed by untoward reactions. Therefore, before the Siverson decision, it would be logical to expect that the Wolfsmith holding would result in application of *res ipsa loquitur* where "trouble" followed their use.

But what of the calculated risk of injury associated with common injections, spinal anesthetics or anesthesia incident to tonsillectomy, etc.? If the policy basis for the Siverson decision is a curtailment of the scope of application of *res ipsa loquitur* in order to prevent "an undesirable limitation on the use of operations or new procedure . . .," then the Supreme Court may choose to ignore the calculated risk principle in future cases where rare injuries result from non-surgical routine procedures. Note, however, that the Supreme Court disapproved language in the Valentine and MacDonald decisions wherein *res ipsa loquitur* was invoked because of the rarity of the accidents involved. Analysis of the disapproved language in these two District Court of Appeal decisions suggests the extent to which in future cases the Supreme Court may further narrow the scope of application of *res ipsa loquitur*.

The Valentine case involved a circumcision with resultant gangrene and loss of the glans penis. The District Court of Appeal applied *res ipsa loquitur* because of the rarity of this accident.

In the MacDonald case a 10-year-old child was injured as a result of a fall from her hospital bed while she was under the effects of pre-operative sedation. Here, also, the doctrine was applied because, "the accident suffered by the appellant was rare, if not unprecedented."

THE Supreme Court's disapproval of the Valentine decision is consistent with the restriction of the rarity principle where the injury in question is incident to an operation. Is there a calculated risk of this injury following circumcision? Probably not, and the Supreme Court presumably would not overrule the application of the doctrine to a similar case provided the plaintiff showed that loss of the glans penis is not one of the calculated risks of circumcision.

The MacDonald case, however, did not involve an operation or a new procedure. The inference of negligence arising from the fall was based on the admitted rarity of this occurrence. Thus, the court's reference to the MacDonald decision suggests that the logic of its statement, "the fact that a particular injury . . . is something that rarely occurs does not prove that the injury was probably caused by the negligence of those in charge of the operation," will extend beyond operations or new procedures.\*

## CONCLUSIONS

In the area of medical malpractice law California courts have employed *res ipsa loquitur* as an instrument of social policy. The object has been to even up the balance between the patient who sues and the doctor who defends—a balance hitherto considerably weighted in the doctor's favor because of the understandable reluctance among physicians to testify against one another.

Until the Siverson decision, *res ipsa loquitur* in California underwent a steady expansion for almost 20 years. Has this expansion come to an end? Will the California Supreme Court in all future malpractice cases deal squarely with the calculated risk issue where the application of *res ipsa loquitur* is in question because of the rarity of a medical injury? If a further limitation in the doctrine's scope does occur, it will be, in part, an expression of confidence in the medical profession: a confidence that throughout California no plaintiff's meritorious suit will fail for lack of expert testimony. That the California Supreme Court has the responsibility of restoring a rational outlook on the California medical malpractice scene is obvious. But the California physician's responsibility in achieving and maintaining this goal is no less obvious.

The patient who honestly feels he has been injured by a physician's negligence has the right to sue. Once in court he has the right to competent medical testimony in order that the jury may judge intelligently as to the merits of his case. The physician who objects to this formulation is not only resisting what the courts regard as the most fundamental sort of justice, he is also asking for further lay (*i.e.*, judicial) speculation on medical standards of competence. This speculation has already resulted in the steady expansion of *res ipsa loquitur* to the extent that the California Supreme Court was finally able to state, "It is a matter of common knowledge among laymen that injections in the arm, as well as

\*In December 1962 the California Supreme Court handed down the most recent decision on *res ipsa loquitur* in malpractice law. (*Davis v. Memorial Hospital*.) This case involved the question of whether or not the rectum was injured in the course of giving an enema. The court recognized that there is no calculated risk of such injury incident to an enema, and stated that the jury should decide whether or not the rectal injury was due to this procedure. If so, then *res ipsa loquitur* would apply.



other portions of the body, do not ordinarily cause trouble unless unskillfully done or there is something wrong with the serum." What if this decision in the Wolfsmith case had not been modified by the Siverson opinion? What if the Siverson decision had held that rare accidents incident to operations shall invoke *res ipsa loquitur*? What if the California Supreme Court should, in the future, steadily chip away at the calculated risk principle until any untoward and rare accident in medicine brings the physician into court? It is by no means impossible that 20 years from now such will be the state of medical malpractice law in California. The effect of such a legal situation on the practice of medicine requires no comment.

At the present time three counties in California provide expert witness panels for the patient-plaintiff in malpractice cases. Will other counties follow suit? If not, should the California Medical Association sponsor an expert witness panel, making available expert medical evaluation for any patient-plaintiff anywhere in California?

It seems to this writer that such an action by the California Medical Association would, over the long pull, affect favorably the medical malpractice situation in California. Perhaps many physicians, given all the facts, would feel likewise. But what about the involved insurance companies? Certainly their interest is long term, but they have a short term interest also. To the extent that some insurance companies may resist the development of expert witness panels in this state, their resistance is perfectly understandable. If this resistance turns out to be unwise, and if, as a result, malpractice law in California becomes far more onerous for the physician over the next 20 years, the insurance companies can

always withdraw their coverage and concentrate on other states. The California physician, however, does not have this solution readily available to him. It is for this reason that physicians, rather than insurance companies, should make the crucial decision and make it now: Shall California physicians, by their conduct, make judicial speculation on the doctor-defendant's liability unnecessary? Or do California physicians wish to leave in lay hands (that is, the hands of the courts) the job of deciding what set of medical facts logically supports the patient-plaintiff's contention about the doctor-defendant's alleged negligence?

For any court of law the central questions are: Who is right; where does justice lie? In medical malpractice cases the California courts will pursue these questions with or without adequate medical assistance. If we deny our courts the help they need, what is the future of medical practice in California?

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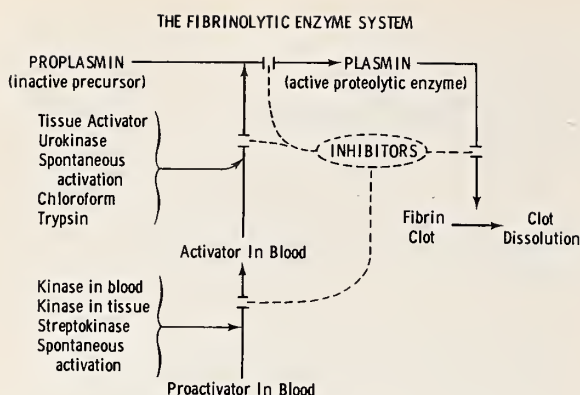


Chart 2.—The fibrinolytic enzyme system.

well as in tissues and certain body fluids (Chart 2). One might conclude that the fibrinolytic system is a balanced system and that clot dissolution is critically controlled in the normal living organism.

#### Proposed Mechanisms for Clot Lysis

The active fibrinolytic enzyme, plasmin, like most proteases, is capable of acting upon a number of different protein substrates in addition to its physiologic substrate *fibrin*. For example, this enzyme can hydrolyze certain proteinaceous clotting-factors like fibrinogen, proaccelerin, antihemophilic factor, prothrombin and Christmas factor, and certain other blood proteins. One might suspect from this list of substrates that uncontrolled plasmin activity could easily play havoc with the entire blood clotting system . . . and this is true. A number of spontaneous pathological conditions have been observed in which overwhelming activation of plasmin occurs in association with decidedly deranged clotting ability. This may be seen in obstetrical cases with amniotic-fluid embolism or with a retained dead fetus, and following surgical operations, most frequently thoracic procedures. Similar hemorrhagic diathesis may also accompany such disorders as prostatic carcinoma, cirrhosis and leukemia.

**Role of Plasmin-Antiplasmin Complex.** The knowledge that plasmin has this rather non-specific substrate specificity has led a number of investigators to study the mechanism by which plasmin might act upon intravascular fibrin without affecting the other numerous blood proteins. It was shown that human plasma contained at least 30 times the amount of antiplasmin (or plasmin inhibitor) necessary to neutralize all the plasmin that could be formed in the body. Thus, circulating proteins would be protected from destruction if the circulating antiplasmin combined with and inhibited the plasmin. However, it is known that fibrin clots are *preferentially* dissolved despite the high levels of antiplasmin. To explain this phenomenon, Ambrus,

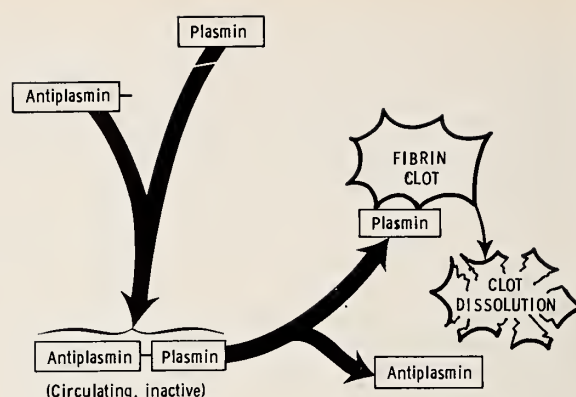


Chart 3.—Mechanism of clot dissolution (Ambrus, et al.).

Bach and Ambrus<sup>2</sup> conceived the following theory based upon their experimental observations (Chart 3). They state that plasmin in blood is rapidly bound to antiplasmin. The resultant plasmin-antiplasmin complex acts as a reservoir and transport form that supplies plasmin to fibrin but protects other plasma proteins from the proteolytic effect. The fibrin can compete effectively with antiplasmin for plasmin, so that the presence of fibrin clots causes the antiplasmin to release plasmin to the fibrin, and clot dissolution occurs. These investigators supported this concept experimentally through the use of radioactive labeled plasmin. Following an infusion of the labeled plasmin into dogs the fibrinolytic activity resulting from the infusion rapidly decreased, but the radioactivity persisted in the circulation for a long time, suggesting that the circulating radioactivity represented the plasmin-antiplasmin complex which in itself was not enzymatically active. However, when experimental blood clots were exposed to this radioactive but enzymatically inactive blood, these blood clots were slowly dissolved. Ambrus and his coworkers concluded that the plasmin-antiplasmin complex continuously released plasmin to the clots and slowly dissolved the clots.

**Role of Adsorbed Proplasmin.** Another concept has been offered by Sherry's group<sup>1,7,17</sup> as an explanation for the apparent *in vivo* specificity of plasmin for fibrin substrate (Chart 4). They state that fibrin has an extremely high affinity for proplasmin, and that fibrin clots contain substantial quantities of proplasmin in intimate spatial relationship with the fibrin fibrils. Following the formation of a clot, therefore, the proplasmin exists as a dual-phase system, some of the proplasmin remaining in plasma and some of it attaching to the fibrin clot. Slow activation of proplasmin in the plasma would produce no detectable effect since the plasmin is rapidly inhibited by the circulating antiplasmin. The clot, however, does not adsorb anti-

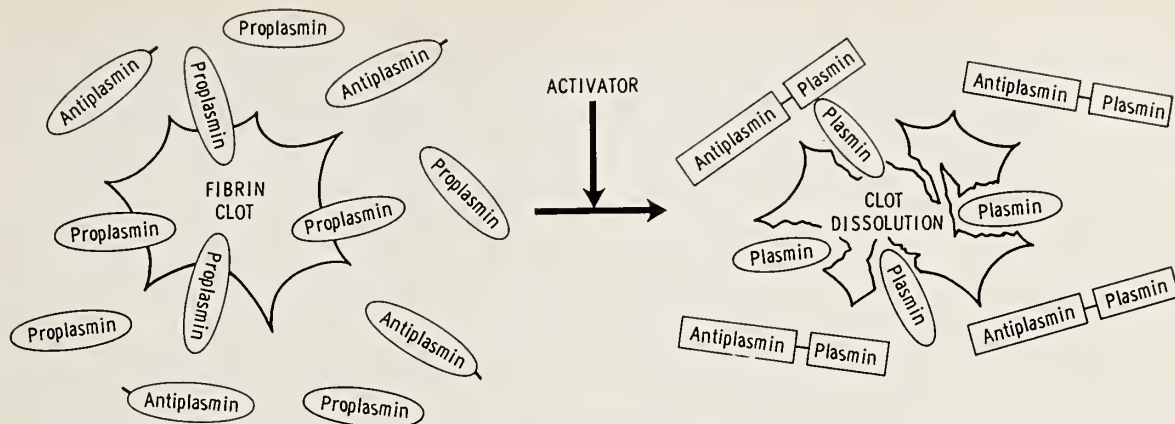


Chart 4.—Mechanism of clot dissolution (Sherry, et al.).

plasmin and is therefore relatively free of inhibitor, so that activation of the adsorbed proplasin results in clot lysis.

#### Therapy as Related to Proposed Mechanisms of Clot Lysis

*Use of Plasmin.* It is important that the true nature of *in vivo* clot lysis be known, since knowledge of these mechanisms would help us decide upon the most appropriate form of therapy for assisting in the lysis of thrombi. For example, according to the theory of Ambrus and coworkers, fibrinolytic therapy could consist of an intravenous infusion of active plasmin to form a reservoir of circulating antiplasmin-plasmin complexes, and thereby provide a continuous supply of plasmin to the clot. Therapy would thus be relatively simple inasmuch as the amount of plasmin to be infused would not be too critical, since one would not be attempting to produce demonstrable levels of protease activity in the whole plasma. The resulting clot lysis, however, would occur very slowly; Ambrus showed that in dogs 63 per cent of a fibrin clot dissolved during a 24-hour period following a single infusion of plasmin over a 15-minute period. One concern during such therapy would be that the plasmin infusion would have to be given slowly so that the plasma inhibitory mechanisms would not be overwhelmed and a state of generalized plasma proteolysis not be produced. This problem could be overcome by using mixtures of plasmin and antiplasmin for therapy, thereby preventing the development of hyperplasminemia.

*Use of Proplasin-Activator.* In contrast, Sherry's concept of *in vivo* clot lysis implies that plasmin itself would not be the most effective therapeutic agent; instead plasminogen activators would be indicated to activate the adsorbed proplasin on the fibrin clot. Streptokinase is the most readily available proplasin-activator, and has been used

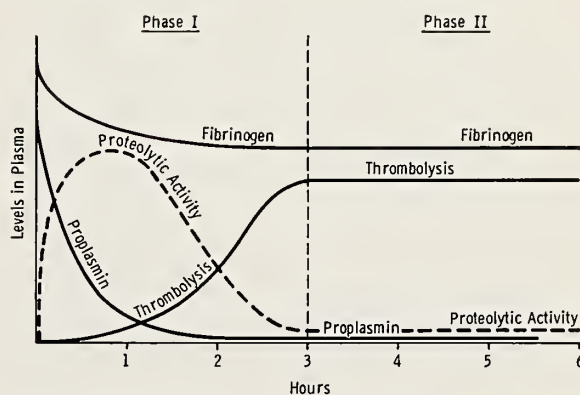


Chart 5.—Changes associated with Phase I and II of streptokinase therapy as shown by Sherry, et al. (Continuous high level streptokinase infusion.)

and studied by Sherry's group most extensively. The proposed form of therapy utilizing streptokinase would not be quite so simple as that just described for the use of plasmin. First of all, varying levels of streptokinase antibodies are present in the plasma as a result of previous streptococcal infections. Therapy, therefore, must consist of an initial priming dose of streptokinase to neutralize this level of circulating antibody to streptokinase, followed by a sustaining infusion of streptokinase to induce thrombolytic activity. The amount of streptokinase to be given as the priming dose would depend upon the level of streptokinase-antibody in the individual patient, and this would be determined before beginning therapy. Secondly, Sherry advised that in order to attain adequate thrombolytic activity, sufficient streptokinase be given at a rate rapid enough to completely activate all the circulating proplasin (Chart 5). Apparently the *adsorbed* proplasin cannot be activated until all of the *circulating* proplasin is first activated and a high level of circulating streptokinase is attained. Therefore, during the early stages of therapy a hyperplasminemic or



proteolytic state is always produced and is manifest by a decrease in fibrinogen levels (about 30 per cent) and by an occasional hemorrhagic diathesis. However, with time, all circulating plasmin is neutralized by antiplasmin, and since the supply of circulating proplasmin has also been exhausted, the plasma proteolytic state diminishes. At this time, usually about two hours after the beginning of therapy, the phase of active clot lysis begins and is dependent upon the maintenance of a continuously high level of circulating streptokinase. Thus, according to Sherry and coworkers, streptokinase therapy has a two-phase effect upon the fibrinolytic system (Chart 5); the first phase, lasting about two or three hours, occurs when circulating proplasmin undergoes rapid and complete activation, thereby liberating free plasmin in the circulation. During this phase specimens of blood drawn from the patient will clot and then subsequently lyse because of the circulating active plasmin. The second phase is that period during which the concentration of streptokinase reaches and is maintained at a high level. Blood drawn from the patient during this latter phase will also clot but now will not lyse spontaneously because plasmin is completely inhibited, and there is no supply of proplasmin for adsorption to the fibrin clot to be activated. This blood, however, will cause a previously formed thrombus to lyse since the high level of streptokinase will activate any proplasmin previously adsorbed into the clot.

*Hyperplasminemic State.* Thrombolytic therapy as viewed by Sherry has certain inherent dangers and certain features requiring careful laboratory control. The dangers involve first the development of a hyperplasminemic or proteolytic state that could produce a hemorrhagic diathesis. Sherry's group demonstrated that hemorrhage in these instances results primarily from defective fibrin polymerization caused by the fibrinogen fragments released during the proteolytic breakdown of fibrinogen.<sup>8</sup> These fragments of fibrinogen circulate in the plasma and act to inhibit the polymerization and gelling of fibrin even though the level of plasma fibrinogen itself is usually in the low normal range and other clotting factors are not significantly reduced. Some control over this state has been obtained through the use of epsilon-amino-caproic-acid (an inhibitor of proplasmin activation), this agent bringing about disappearance of the coagulation anomaly within a period of 12 to 24 hours.<sup>7</sup> The use of steroids concurrently with streptokinase therapy has also reduced the frequency of hemorrhagic states.<sup>15</sup>

*Streptokinase Antibodies and Laboratory Control of Thrombolysis.* Another problem associated with the use of streptokinase relates to the development

of streptokinase-antibodies, which makes retreatment of patients more and more difficult since a larger amount of streptokinase must be infused merely to neutralize the antibodies. Indeed a few reports suggest that retreatment may be complicated by hypersensitivity reactions. Laboratory control of thrombolytic therapy is required to determine the amount of streptokinase to be given as a priming dose for neutralizing the streptokinase-antibodies, and also to demonstrate the attainment and maintenance of a thrombolytic state. The priming dose is determined by calculating the number of streptokinase units required to produce plasma fibrinolysis in 1 ml of plasma in 20 minutes, and then multiplying this amount by the patient's calculated plasma volume. This amount of streptokinase is then injected over a 10 to 40 minute period. The other tests for evaluating the thrombolytic state involve measurements of the rate of digestion of isotopically labeled clots, or assay of plasma thrombolytic activity, utilizing the fibrin plate technique. Measurements of blood proplasmin levels also aid in determining whether therapy is adequate; if proplasmin levels do not drop to zero or trace amounts during the infusion, then not enough streptokinase is being injected.<sup>8</sup> Therapy, according to Sherry's concept, must be intense and adequate for the attainment of thrombolysis, but it is claimed that the injection of an appropriate priming dose and a sufficient sustaining infusion of streptokinase will cause predictable and highly reproducible biochemical changes in patients.

Johnson and McCarty<sup>11</sup> disagree in part with Sherry's concept of thrombolytic therapy. They claim that new clot formation occurs at the same site in varying degrees during therapy, and if proplasmin is depleted excessively by the infusion of large amounts of streptokinase, then the newly forming clots will not be lysed and thrombolytic therapy will fail. They recommend the use of streptokinase in moderate dosage to permit an excess of circulating proplasmin for effective thrombolysis. Otherwise, Johnson and McCarty agree with Sherry's concept of thrombolysis.

#### A Unified Concept of Thrombolysis

It would not be too difficult to unify the two major concepts regarding the *in vivo* specificity of plasmin for fibrin substrate by merely stating that probably both concepts are correct—namely, that fibrin has an affinity for plasmin and can separate it from a plasmin-antiplasmin complex, and that the proplasmin adsorbed to the fibrils of fibrin can also be activated by activators without the interference of inhibitors. It would seem that thrombolytic activity resulting from the activation of adsorbed proplasmin would give a more rapid,

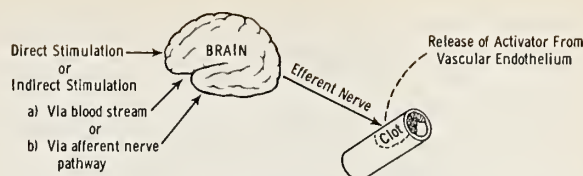
**TABLE 1.—Agents and Procedures Capable of Inducing Intravascular Fibrinolytic Activity**

1. *Pharmacological Agents*
  - a. Nicotinic Acid
  - b. Chlorpropamide (sulfonylureas)
  - c. Bacterial pyrogens
  - d. Pitressin
  - e. Heparin
2. *Plasminogen Activators*
  - a. Streptokinase
  - b. Urokinase
3. *Mixtures of Plasminogen Activators and Plasmin*
  - a. Actase
  - b. Thrombolylin

} Streptokinase plus plasmin
4. *Plasmin*
  - a. Chloroform activated
  - b. Spontaneously activated
  - c. Pyrogen activated
5. *Other Proteolytic Enzymes*
  - a. Aspergillin O
  - b. Thrombin E or acetylated thrombin
6. *Procedures*
  - a. Venous stasis
  - b. Pneumoencephalogram
  - c. Electroshock
  - d. Extracorporeal circulation

but possibly unsustained, period of clot lysis, and that the lytic activity provided by the reservoir of plasmin-antiplasmin complexes would be slower but more prolonged. However, Sherry and coworkers said they were unable to demonstrate effective clot lysis unless a high level of circulating activator was induced, and they vehemently challenged the validity of Ambrus' theory despite the experimental support provided by Ambrus' group. Clinical evaluation in this regard is inconclusive since both success and failure have been reported with the use of relatively small doses of plasmin and streptokinase. However, evaluation of clinical results is sometimes difficult inasmuch as, in many instances, the actual clot cannot be visualized, and in other cases the nature of the obstruction causing vascular occlusion is unknown; an embolus formed from an aged clot or from a calcified plaque cannot be expected to dissolve. On the other hand, one cannot depend completely upon *in vitro* tests to determine whether adequate clot dissolution is occurring *in vivo*, since what occurs in the test tube need not be entirely related to what is occurring in the blood vessel.

A way must be found to resolve this conflict of theories. If clot dissolution can be accomplished through the use of relatively small amounts of enzyme, whether an activator or plasmin itself, then thrombolytic therapy would lose much of its forebodings insofar as hemorrhagic complications are concerned, and the cost of such therapy would come well within the reach of most persons. The



**Chart 6.—Proposed pathway for induction of release of proplasmin-activator from vascular endothelium in man. (von Kaulla.)**

more intensive therapy proposed by Sherry is frequently complicated by hemorrhagic problems, must be carefully controlled by laboratory testing, and at present would be prohibitively costly except in a research setting. Only continued research in this field can clarify this situation.

#### Other Modes for Inducing Thrombolysis

Thus far this communication has considered some of the problems relating to the choice of an appropriate agent for use in thrombolytic therapy. However, many more modes for inducing intravascular thrombolysis are being investigated than the two alluded to in the preceding discussion. Most of them are listed in Table 1, but will not be discussed here. However, a word should be said about urokinase,<sup>6</sup> a naturally occurring proplasmin activator found in human urine. The use of this activator for therapy does not have some of the drawbacks associated with the use of streptokinase, inasmuch as there are no antibodies to urokinase present in the blood, and it appears as if an effective thrombolytic state can be produced in blood by urokinase without simultaneously causing the unwanted hyperplasmemic state.<sup>16</sup> Urokinase would seem to be the most appropriate thrombolytic agent known to date, but it is not as easily obtained as is streptokinase, and suitable preparations are not available for extensive clinical trial.

Another interesting observation related to methods for inducing fibrinolytic activity is that a pneumoencephalogram is an extremely potent fibrinolysis-inducing procedure.<sup>18</sup> This phenomenon suggests that neural pathways may be involved in the natural release of fibrinolytic activity in the organism. von Kaulla<sup>18</sup> suggested that certain types of stimuli, carried either via the blood stream or by afferent nerves, may excite a center in the brain (Chart 6). The stimulated center in turn would send impulses to the site of clot formation causing the local release of proplasmin-activator from the vascular endothelium with resultant clot lysis. This concept is of interest as a possible explanation of how the organism might cause the local dissolution of thrombi without setting off systemic fibrinolytic activity. The activator would be released in the vicinity of the clot and would be relatively protected



from the circulating inhibitors. Further knowledge regarding such an endogenous fibrinolytic enzyme system might be of benefit for subsequently developing methods to trigger this system and avoid the use of other less natural enzyme preparations.

#### Choice of Site for Enzyme Infusion

Aside from the choice of agent, another problem for consideration in thrombolytic therapy relates to the choice of site for administering the fibrinolytic preparation. The two possible choices are: (a) intravenous therapy at a convenient site, or (b) injection of the fibrinolytic agent into the immediate vicinity of the thrombus. The latter form of therapy would involve the injection of the agent directly into the involved artery in the case of arterial occlusion, or intravenously, immediately distal to a venous occlusion. Since it seems logical that clot lysis should depend upon the amount of active enzyme or activator delivered to the clot, one would expect better results if the agent were injected into the involved blood vessel in the vicinity of the clot rather than into a more convenient but distant blood vessel in which the enzyme would be markedly diluted prior to reaching the clot. This supposition has actually been substantiated by experimental studies, especially in the case of arterial thrombi, where direct intra-arterial injections appear to be more effective than intravenous injections,<sup>5</sup> although in the treatment of venous thrombi administration of the agent into a convenient peripheral vein is sufficient. It is possible that the more rapid flow of blood in arteries interferes with the adsorption of fibrinolytic agents onto the clot, thus requiring higher concentrations, while the slower blood-flow in veins allows more effective adsorption. In the treatment of coronary thrombosis, catheters have been used to deliver the enzymes directly into the root of the aorta with much better results than could be achieved by intravenous therapy. Although this problem has not been completely clarified, it would appear that better results are obtainable if the fibrinolytic agent is administered directly into the involved blood vessel in the immediate vicinity of the clot. The danger associated with arterial puncture of a severely atherosclerotic vessel must be appreciated, however.

#### Complications of Thrombolytic Therapy

Among the potential dangers of administering fibrinolytic agents, the hemorrhagic diathesis associated with a hyperplasminemic state and a possible allergic response to streptokinase already have been discussed. A few other potential dangers should also be mentioned. Most clinical investigators have been looking for an increased incidence of pulmonary embolism during fibrinolytic therapy, but

this complication of therapy has not been observed with any significant frequency. Clots apparently are dissolved by these exogenous enzymes in such a manner that clot fragments are not released into the circulation. However, another more significant and serious complication was described by Rasmussen<sup>14</sup>—a clinical situation resembling the “crush syndrome” occurring in a person in whom circulation was restored following an occlusion in the lower part of the aorta. The patient died suddenly from shock five hours after treatment, and the autopsy findings suggested that adsorption of toxic substances from the ischemic and necrotic tissues was the cause of shock and death. It is obvious that the reestablishment of circulation to an ischemic or necrotic area will always result in the diffusion of toxic substances into the blood, and it is quite possible that some of the side-effects such as fever and chills described during fibrinolytic therapy may be caused in this manner and not be due directly to the administered preparation. The dangers associated with rapid reestablishment of circulation to an ischemic area must be considered with thrombolytic therapy.

#### Expectations from Thrombolytic Therapy

The final consideration in this discussion must pertain to what can be expected of thrombolytic therapy. Can dissolution of an obstructing clot be beneficial in an area where tissue death with necrosis has already occurred? In other words, is thrombolytic therapy beneficial for a myocardial infarction or a cerebro-vascular accident? The answer to this question is not yet known, but animal experimentation suggests that such therapy is beneficial in that it prevents and reverses a hypercoagulable state and reopens the microcirculation,<sup>13</sup> thereby protecting large areas of myocardium or brain tissue that have not yet become necrotic. Thrombolytic therapy has also been found to be safe in these conditions in that such therapy does not appear to cause hemorrhage into a previously dry infarct. However, the potential value of thrombolytic therapy must be considered relative to the character of the clot to be dissolved. Factors such as the fibrinogen content of the clot,<sup>9</sup> the lipid content of the clot<sup>4,10</sup> and the age of the clot<sup>3,9</sup> all affect the rate of clot dissolution. A clot that is older than 48 to 72 hours usually has retracted and has begun to organize, with increasing resistance to fibrinolytic enzymes. In addition, the local factors responsible for initiating clot formation have not been altered by thrombolytic therapy and, unless appropriate precautions are taken, a second clot will usually form after enzyme therapy is discontinued. Clot-dissolving therapy in itself is not complete therapy, but must be followed immediately with appropriate anticoagulation, pref-

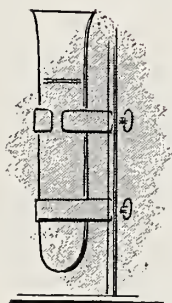
erably with heparin. Combined fibrinolytic and anticoagulant therapy is being investigated<sup>12</sup> but seems to cause too severe a clotting defect for safe use.

Thrombolytic therapy holds great promise for becoming an important therapeutic adjunct in the treatment of acute vascular occlusions, but such therapy has not yet reached the stage for general clinical use. It must still remain a research tool to be used with utmost care and laboratory control.

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# Congenital Atresia of the Esophagus and Tracheoesophageal Fistula

## Review of 48 Cases

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THE PURPOSE of this paper is to present the experiences at the University of California Medical Center, San Francisco, in the management of congenital atresia of the esophagus and tracheoesophageal fistula.

The first patient with esophageal atresia and tracheoesophageal fistula on record at this center was born at the University of California in 1937. In the ensuing 25 years (through 1961), 48 patients with these anomalies were admitted to the University of California Medical Center. All diagnoses were confirmed at operation or autopsy. Four of the patients were born at the University of California Hospital (a ratio of 1 to 6,823 births); 44 were referred from Northern California physicians. Twenty-five were females and 23 males; 11 were premature (by weight—2,500 gm or less). In 47 cases the lesions were of Ladd type III,\* and one had an "H" type fistula without esophageal atresia. In all cases but one (the "H" type fistula), the referring physicians had established the diagnosis before admission by passing a tube into the blind esophagus or by demonstrating the nature of the anomaly by radio-opaque contrast study.

The presenting symptoms during the first hours or days of life were excessive mucus, choking, cyanosis, sputtering and regurgitation of feedings.

The average birth weight of the 48 babies was 2,850 grams; that of the 12 survivors was 2,945 grams, and of those not surviving operation 2,766 grams. The infants surviving surgical repair were operated upon at an average age of 2.25 days; for those who died the average was 3.81 days. Average survival (in days) of the infants who underwent operation is compared with survival time of those treated medically in Table 1. Causes of death in 36 cases are listed in Table 2. Table 3 shows the types of anomalies found in 18 of the 34 infants at autopsy. In five of these babies, the associated anomaly was the probable cause of death or contributed to it.

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\*Ladd type III, the most common variation, consists of esophageal atresia with a blind upper pouch and a lower esophageal segment which communicates at its lower end with the stomach and at the upper end with the trachea, the latter through a fistulous tract at the region of the tracheal bifurcation.

• Forty-eight cases of esophageal atresia and tracheoesophageal fistula observed at the University of California Medical Center, San Francisco, over a 25-year period (1937-1961) were reviewed. Four of the patients were born at the University of California Hospitals, a frequency of 1 in 6,823 births. In 43 of the 44 referred cases, the referring physician established the diagnosis before admission by passing a tube into the blind esophagus or by radiography.

Survival rates are comparable to those of other medical centers and emphasize the importance of prompt diagnosis, skillful repair and meticulous preoperative and postoperative care.

TABLE 1.—Nature of Treatment and Length of Survival of 48 Patients with Esophageal Atresia and Tracheoesophageal Fistula

No. Cases	Condition	Average Days Survival
7	No operation .....	10
2	Fistula ligation only.....	3½
2	Gastrostomy only .....	11½
1	H-type operation .....	7½ mo.
1	Stillbirth .....	....
12	Ladd III ligation and anastomosis.....	living
23	Ladd III ligation and anastomosis.....	21

TABLE 2.—Causes of Death in 36 Cases of Esophageal Atresia and Tracheoesophageal Fistula

	No. Cases
<i>Without operation—</i>	
Aspiration pneumonia and atelectasis.....	5
Brain hemorrhage .....	1
Malnutrition and dehydration.....	1
	7
<i>Stillbirth .....</i>	1
<i>Operation—</i>	
Mediastinal hemorrhage or infarction, hydrothorax, emphysema, pulmonary edema, atelectasis (post-operative); in 5 of the 11 the anastomosis had dehiscd .....	11
Aspiration pneumonia (due to refistulization).....	5
Aspiration pneumonia (dating prior to surgery).....	5
Congenital heart disease.....	3
No autopsy .....	2
Asphyxia (post-tracheostomy) .....	1
Malnutrition and dehydration (diarrhea).....	1
	28

**TABLE 3.—Congenital Anomalies Associated with Esophageal Atresia and Tracheoesophageal Fistula in 18 Cases**

Gastrointestinal..	11	(Meckel's diverticulum, 5; accessory spleen, 3; ectopic pancreas, 3; imperforate anus, 2; cloacal anus, absent gallbladder, pyloric stenosis, gastric hernia and lymphangiectasis of colon, 1 each)
Cardiovascular ..	8	(Patent ductus arteriosus, 5; coarctation of aorta, 3; aberrant right subclavian artery, 2; atrial septal defect, absent left umbilical and iliac arteries, bicuspid pulmonary and aortic valves, 1 each)
Genitourinary ....	7	(Fused kidneys, 2; absent kidneys, hypoplastic kidneys, anomalous ureters, hypospadias, bicornate uterus, double ureters, 1 each)
Other anomalies..	8	(Hemivertebrae, 2; microgyric occipital lobes, cavernous hemangioma of choroid plexus, cleft palate, absent right thumb and hypoplastic left thumb, double rib, 1 each)

#### DISCUSSION

Esophageal atresia and tracheoesophageal fistula is a relatively uncommon anomaly. The incidence at UC Medical Center, San Francisco, was 1 in 6,823 births in the 25-year period reviewed; other investigators<sup>13</sup> have estimated its incidence as 1 in 2,500 births. This combination of anomalies was first described by Gibson<sup>5</sup> in 1703. Leven<sup>10</sup> and Ladd<sup>9</sup> contributed to recent interest by their surgical successes in 1939.

Early diagnosis, skillful surgical repair and meticulous preoperative and postoperative management continue to influence survival rates, which have ranged in various series from 36 to 62 per cent.<sup>14</sup> In the present series (up to 1953) five of the 22 infants (23 per cent) undergoing ligation of the fistula and anastomosis of the esophageal atresia survived. Since 1953, seven of thirteen (54 per cent) have survived. Other factors that appear to have prevented a higher survival in this series were dehydration, malnutrition, prematurity, aspiration pneumonia (in many cases present before operation), the presence of co-existing anomalies—especially cardiovascular—and an unusually long atretic esophageal segment.

\*Reference Nos. 1-4, 6-8, 11, 12, 14.

The "H" type fistula presents a special problem in both diagnosis and treatment. Diagnosis in the one case in the present series was dramatic and accidental—a nurse noted bubbles emerging from the tip of a feeding tube which had been passed half way down the esophagus. Surgical repair was technically successful but the child died.

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# Influenza Virus Vaccine

## The Effect Upon an Outbreak of the Disease Among a Geriatric Population

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DURING RECENT YEARS, recommendations have been made by public health agencies to immunize certain groups within the population against influenza. In particular, persons 65 years of age and over have been advised to be immunized. In view of these recommendations, all patients 65 years of age and over in Stockton State Hospital were given influenza virus vaccine during October and November of 1962. In March, 1963, an acute respiratory illness became widespread among the patients on some of the wards. This report is concerned with the experience on one particular ward and provides data regarding the effect of immunization upon the attack rate.

### STUDY POPULATION

Stockton State Hospital is a 3,700-bed, general psychiatric hospital arranged in a general cottage plan. It serves a wide geographic area in Northern California. One particular cottage, the subject of this report, houses newly admitted, ambulatory men and women who are 65 years of age and over, and has an average daily census of approximately 70 patients.

On October 1, 1962, and again on November 8, 1962, each patient on the ward received an intradermal injection of 0.1 ml of influenza virus vaccine polyvalent\* Types A & B (Eli Lilly Company). Subsequently, additional new patients were admitted to the ward from their own homes or from other hospitals or institutions, but were not given the vaccine. It is possible, however, that some of the newly admitted patients may have received vaccine of this kind before admission to Stockton State Hospital.

### OBSERVATIONS

From March 6, 1963, through March 21, 1963, it was noted that there was an outbreak of respiratory illness among the patients. The illness appeared to be of influenza type, characterized by a fever up to 104° F, which generally subsided in three to five

• In an outbreak of laboratory-confirmed influenza A-2 (Asian strain) on a 70-bed geriatric ward in which some patients had received influenza vaccine and some had not, 30 patients out of a total of 75 developed clinical evidence of influenza associated with fever. Of the 30 patients, 24 apparently had not received both doses of the influenza vaccine. Of 29 patients who received two 0.1 ml doses of influenza virus vaccine, six developed clinical evidence of infection, whereas, of the 46 patients who did not receive both doses, 24 developed the illness.

days. Coryza, sore throat, headache, myalgia and a non-productive cough were also generally noted. Of 75 patients on the ward during this period, 30 were identified as being sick to the extent that there was a fever of 100° F or more. In general the attitude of members of the ward staff had been that the influenza immunization program was not apparently of much value, until it was also noted that the incidence of disease appeared to be much higher among patients who had not received the vaccine.

In view of this observation, additional efforts were made to maintain records and to identify the etiological agent. The California State Department of Public Health was notified and, on March 21, 1963, a member of the staff from the Department's Bureau of Communicable Diseases and the Viral and Rickettsial Disease Laboratory collected specimens of blood and material swabbed from the throats of seven selected patients who were in the acute phase of the illness, in this and a neighboring cottage experiencing a similar outbreak.

### RESULTS

As may be noted on Table 1, in 30 of a total of 75 patients on the ward clinical evidence of influenza developed, as determined by the presence of fever plus other typical physical signs and symptoms. Of these 30 patients, 24 had not received both doses of the vaccine. In six of 29 patients who had received both doses, clinical evidence of influenza developed, whereas 24 of the 46 patients who had not received both doses became ill. These were statistically significant findings ( $\chi^2=7.34$ ,  $p<.01$ ). When the patients were classified into three groups

From the Stockton State Hospital, Stockton 95202.  
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\*Lot No. 1056-807824. Each cc contains 200 CCA units of Asian strain, 100 CCA units of PR8, 100 CCA units of Ann Arbor 1/57 and 100 CCA units of Great Lakes Strain.

TABLE 1.—Number of Patients Receiving Influenza Vaccine

	Two Doses*	One Dose	None	Total
Patients with fever†.....	6	2	22	30
Patients without fever.....	23	1	21	45
TOTAL PATIENTS .....	29	3	43	75

( $\chi^2 = 7.68$ ,  $p < .05$ )

\*Dose: 0.1 ml intradermally.

†Oral temperature of 100° F or higher.

as shown on Table 1, rather than two groups, significant statistical differences may also be noted ( $\chi^2 = 7.68$ ,  $p < .05$ ).

The reports from the State Department of Public Health indicated that influenza A-2 (Asian strain) was isolated in embryonated eggs from throat swabs of five of the seven patients tested. Six of the seven patients showed a rising blood titer and this was also reported as being positive for influenza Type A.

Observations were made from March 5, 1963, through May 31, 1963. There were four deaths among the observed patient population during this time. Two of the four patients received both doses of the vaccine, and both were included as a part of the six patients shown in Table 1 because of a temperature of over 100° F, even though there was minimal clinical evidence of influenza. One patient was febrile for several weeks before March and died on May 10, 1963, from multiple myeloma. The other patient had coronary occlusion on March 9, 1963, and died on March 12, 1963. Her highest fever was 100.8° F (rectal). Autopsy was done in both cases. The other two patients had not received influenza vaccine. The first patient developed a febrile illness on March 13, 1963, at a time when he was already in congestive cardiac and renal failure, and died on March 14, 1963, with evidence of severe uremia. There was no autopsy. In the other patient severe respiratory illness developed on March 6, 1963, with temperature of 103° F to 104° F, and after a stormy course

apparently recovered; but he later slipped and fell to the floor, received severe injuries and subsequently died on March 30, 1963. Autopsy was performed.

Information was reviewed regarding the severity and prevalence of influenza outside the hospital ward. The total number of hospital deaths for the month of March and the monthly totals for all months in 1962, 1961, 1960 and the first five months in 1963 were reviewed and no significant trends were noted. Provisional Reports published by the State Department of Public Health were reviewed. Apparently there was not a severe outbreak in California during the time of this report, but there was evidence of isolated, laboratory-confirmed outbreaks (California's Health, State Department of Public Health, 21:7 (No. 1), July 1, 1963).

#### DISCUSSION

Of primary interest in this report was the relatively low incidence of illness among patients who received both doses of the vaccine. Statistically significant differences were noted between those who received the vaccine and those who did not in terms of whether or not fever developed. The dosage of the vaccine was 0.1 ml intradermally administered. Inasmuch as no patient received 1.0 ml subcutaneously, we have no data to compare the effectiveness of the larger doses to the smaller doses. It appeared, however, from this study that the dosage and method of administration gave protection against influenza A-2 (Asian strain).

The mortality rate was low and in the four deaths that did occur among the study population, it did not appear that death was the direct result of the influenza infection.

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# Acute Catatonic Reaction of Adolescence

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THE PRESENT STUDY, a preliminary report, was begun with the observation that the presenting posture of the most withdrawn catatonic patients approached the fetal position, that is, the curled-up ball position. Since of all geometric figures a sphere presents the least surface area for a given volume, it seemed reasonable to assume that this posture was a way of limiting the extent of physical contact with the environment. We also observed that there was woven through the fabric of behavior, tentative gestures at some kind of physical contact with other persons, frequently sexual in nature. Almost always there was the quality of testing out the other's physical response. We were provided with a tentative reference point for the meaning of this behavior as the history was elaborated.

The literature on the catatonic reaction in adolescence is sparse. In the extensive writing of Bender<sup>2</sup> and Despert<sup>5</sup> there are occasional references to this reaction. The bibliography compiled by Goldfarb and Dorsen<sup>6</sup> and the review of schizophrenia by Bellak<sup>1</sup> have few references to this subject. Kestenberg<sup>8</sup> and Veo<sup>11</sup> reported on some aspects of schizophrenia in adolescence. Of special interest to us were the possible influences of fundamentalist religious affiliations on the clinical manifestations. Hunt<sup>7</sup> reported a study of a group of adults whom he found to be in conflict, since adolescence, between taught sexual perversions and a set of values obtained through religious conversions (Pentacostal Church). Many of the persons in his study were later committed to St. Elizabeth Hospital as psychotic.

From August 15, 1960, through November 15, 1961, we studied 46 adolescents who were in hospital with the diagnosis of acute schizophrenic reaction. Of these, 21 had an admitting diagnosis of catatonic schizophrenic reaction. The remainder had acute schizophrenic reaction, undifferentiated or paranoid. Bellak,<sup>1</sup> in his book of abstracts on schizophrenia, noted that while the age of onset of catatonic schizophrenia may be 14, in one series of patients over the age of 40, 20 percent were diagnosed as catatonic, with the average age of

• In a study of 21 cases of catatonic schizophrenic reaction of adolescence, sexual conflict situations and stern religious orientation of the family were noted in most cases. Incest was a factor in four of the female patients and masturbatory guilt was a prominent reaction in the remainder. Sex education was mostly misinformation and threats of dire consequences for sexual activity. Fourteen of the cases involved broken homes for significant periods of childhood or adolescence.

It was hypothesized that sexual conflict situations grew out of incompatible socio-cultural attitudes and normal adolescent psychological and physiological drives. We formulated the "defined body contact" technique as a means of facilitating the reversal of the catatonic behavior, which we saw as the primary device whereby the patient limited physical contacts. The contacts we used in this technique were defined explicitly and implicitly as non-sexual.

The catatonic symptoms remitted in days to several weeks in 13 of the cases. Seven patients required electroshock therapy. Twenty of the 21 patients returned to their homes or to non-institutional residences. The length of hospitalization was materially influenced by the degree of readiness of the outside environment to accept the returnee.

onset at 25. Lemieux<sup>10</sup> said in a recent article that it is "almost impossible to present medical students with a patient demonstrating catatonia. Catatonic stupor no longer exists."

In our experience at the Los Angeles County General Hospital, Psychiatric Unit, the catatonic schizophrenic reaction is overwhelmingly a reaction of adolescence. All the adolescents in our study were seen in their first stay in hospital, and so far as could be determined this was the incident of the first diagnosis of schizophrenia for this group of patients.

In this group of 46 adolescent patients, there were 26 females and 20 males with an age distribution as follows:

Age (years) .....	13	14	15	16	17	18	19
No. of patients.....	1	4	8	10	7	6	10

The 13-year-old was a boy whose final diagnosis was severe compulsive obsessive reaction with rage reaction toward his parents. Four of the female adolescents were admitted in an acute withdrawn, frightened, essentially mute state with visual hallucinations. In these patients mental clearing was so

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rapid that the admission diagnosis of schizophrenic reaction was changed to a non-psychotic diagnosis. The remaining 41 adolescents were diagnosed as having acute schizophrenic reactions. Of the 21 patients with catatonic schizophrenic reaction 12 had catatonic withdrawal as the presenting symptom, and nine catatonic excitement. Twelve of these patients were girls and nine were boys. Nine of the girls were in the withdrawn group, all of whom were 16 years of age or younger. The other two girls were 19 and their excitement periods were marked by hebephrenic-like behavior alternating with withdrawn regressed unresponsive periods. In the group of nine withdrawn catatonic girls, four had had direct sexual experience including intercourse in the immediate period preceding admittance to hospital. One was a 16-year-old girl who had been having intercourse with her father over a period of several years, culminating in a pregnancy. The patient had been aborted by the father (who was a non-practicing chiropractor) and was lactating at the time of admission to the hospital. None of the boys had had intercourse; indeed they had mostly not had dating experience and their sexual preoccupation regularly was around the issue of guilt over masturbation.

One of the striking features of these cases is the religious affiliation of the patient and his family. Nine of the patients come from fundamentalist orientations and include the Assembly of God, Jehovah's Witness, Nazarene and African Baptist. Another five come from Catholic backgrounds, with parochial schooling, and at some point transfer to public school education.

#### THE SETTING

This study was carried out in the Psychiatric Unit of the Los Angeles County General Hospital complex. The patients in this study were in an age range of 13 through 19 years. Patients are brought to the Admitting Service where they are examined and a decision made to admit to hospital or not to admit. Eligibility for the treatment services at the LACGH Psychiatric Unit is based on satisfying residential and financial requirements and on being a voluntary patient. The treatment services are defined by law as available to patients whose illness would appear to be hospital treatable within a 90-day period. Treatment largely was carried out by first-year psychiatry residents, although several of the patients were treated by third-year residents. Senior and attending staff supervision was maintained in all cases.

The procedure for patient selection was as follows. All adolescents admitted to the observation wards and diagnosed as having acute catatonic

schizophrenic reaction were seen by one or the other of the investigators in this study for confirmation of the diagnosis. All such patients who satisfied the Los Angeles County eligibility requirements were accepted for the in-patient treatment service. The in-patient treatment service consists of two separate wards, one closed and one open. Both wards have two wings each, and house males and females, all sharing dayroom, eating and other activity facilities. Off ward facilities include recreational area, occupational therapy and adjacent parks.

A comment should be made about the 90-day hospitalization limit and what effect it had, if any, on patient selection. It had been our experience that in our hospital treatment setting, 90 to 95 per cent of the patients with acute first-time psychotic reactions responded well enough to be discharged from the hospital within the 90-day limit. We were aware that it was the experience of many observers that the acute panic reaction of young schizophrenics remitted in a relatively short time—days to several weeks, and even in some instances in a matter of hours. From our experience in treating patients in hospital, we had earlier made the tentative conclusion that long-term hospital stay for schizophrenic illness had become as often a habit as it was a need, and that therefore 90 days was a reasonably long enough time in which to attempt effective hospital treatment. So with that framework regarding time, we accepted on the treatment service all adolescents diagnosed as having acute catatonic schizophrenia. All the patients entered the closed treatment service ward. Some were transferred in the course of treatment to the open ward, from which they were discharged. Others received all their treatment on the closed treatment ward.

In the LACGH Psychiatric Unit experience, more women patients are admitted than males, so the arbitrary decision had been made to house the men in the private rooms and the women in the dormitory rooms which could accommodate more patients. The patients in this study of adolescent catatonic reaction were all housed and treated on predominantly adult wards. During the period of this study the adolescent population at any given time varied from two to six adolescents.

#### DEFINITION

Catatonia is a syndrome seen most frequently in schizophrenia, with muscular rigidity and mental stupor, sometimes alternating with great excitement and confusion. Catatonia, the group of schizophrenic disorders first recognized, got its name from what were considered to be motor tension states. The word means decreased tension and was first applied to the mute, withdrawn posture that was frequently



accompanied by the total suspension of voluntary motion and sensibility. In this state the limbs of the patient could be molded into any position, which then might be retained for a long time (*flexibilitas cerea*). The excitement of catatonia is no less primarily a bodily maneuver marked by stereotypy. The repetitive sexual utterances, the persistent attempts to touch and the repetitive, exhaustive masturbation define a posture of decidedly limited scope.

Bleuler<sup>4</sup> concluded that the "catatonic symptoms do not comprise a homogenous group. . . . Thus we are lacking a unitary viewpoint for the discussion of the genesis of all catatonic phenomena." Stupor, negativism, and motor automatic behavior (automatisms) mannerisms are described by Bleuler in this group of symptoms.

In a discussion of catatonic stupor, Kraepelin<sup>9</sup> emphasized the stereotypism and negativism in the clinical picture as the features that distinguished it from other categories of schizophrenia. He pointed out that this is what Kahlbaum described earlier as catatonia or "insanity of rigidity" in which the most prominent symptom is stiffness in the muscles, with the stiffness only increased by outward interference. In Bellak's compendium<sup>1</sup> a wide variety of symptoms and signs are included in this "type" of schizophrenia, but again what marks it as different from the other "types" is the extreme withdrawal, negativism, stereotypic features and command automatisms.

We feel that the catatonic schizophrenic reaction can be defined with more specificity than has earlier been acknowledged. This specificity has operational value in the designing of a treatment approach. We define as catatonic reaction those schizophrenic reactions in which the body behavior seems to be the primary device whereby the patient maintains distance between himself and all other objects. This is in contrast to the paranoid schizophrenic reaction where the delusional thinking with its defensive, persecutory, verbally belligerent productions largely serves the purpose of maintaining the breach between the patient and any other objects. The posture of the catatonic, with its variations, serves to fend off impulses arising internally and directed toward physical contact with objects outside the person, as well as serving as protection from contacts initiated by the environment. Where withdrawal characterized the gross picture, it was accompanied by the following features:

1. A frightened, almost terrified wide-eyed countenance.
2. A body posture that tended toward minimal body surface contact with the environment.
3. Decidedly limited verbalizations, often highly

sexually symbolic and with overtones of fear of an attack and of guilt.

4. When bodily action occurred it was repetitive, indecisive (a to-and-fro push toward and away from contact); when approached by the external object there was characteristic withdrawal.

The manifestations of catatonic excitement were seen more often in the boys and were expressed in hypomanic, excited behavior with compulsive touching of females and repetitive vulgar (but not vicious) sex talk, all of which was completely out of keeping with the pre-psychotic behavior. Paranoid delusions were frequent accessory symptoms.

#### CASE EXCERPTS

The following excerpts are illustrative of the initial appearance and behavior of patients in this study. (The case numbers are taken from Table 1.)

CASE 9. The patient was a 16-year-old white girl who had sudden onset of withdrawn behavior during which she refused to bathe, took no care at all of her personal appearance and had been screaming at night that she was inhabited by the devil who was eating her, starting with her abdomen and moving up into her chest and neck. During the first week in hospital she became progressively more withdrawn, resistive, mute and posturing. She would stand for long periods against the wall in a huddled stiff posture with only a wide-eyed, terrified look as evidence of life. She refused to eat, soiled and wet herself often and was combative when the nursing staff attempted to dress or bathe her. She refused to enter her therapist's office and avoided him when he attempted to talk to her on the ward.

CASE 3. The patient, a 15-year-old white girl, appeared to be extremely frightened and wide-eyed. She was neatly dressed but her hair was uncombed and she wore no make-up. She was thin and wan, spent most of her time in a curled-up position in bed, hiding beneath the covers, would not answer the examiner's questions and would repeat over and over: "Will my parents come to see me?" "Are they going to kill me?" "I don't want to go to hell."

She was out of bed during the first few days of hospitalization only at the repeated encouragement and assistance of the ward personnel; and during those times the only spontaneous behavior were abrupt dashes to the ward door whenever it was being opened.

Her behavior during the first two weeks of psychotherapy was described as follows: "She would laugh inappropriately when her doctor entered her room and her only responses were to call him a

TABLE 1.—Data on 21 Adolescent Patients with Acute Catatonic Reaction

Case No.	Age and Sex	Position Among Siblings	Religion	Family Integrity	Condition on Admission	Days Hosp.	Disposition	
1.....	14	F	1/1	Moth: 7th Day Advent Father: Nazarene	Intact	Withdrawn	49	Home
2.....	15	F	3/4	Methodist	Intact	Withdrawn	82	Home
3.....	15	F	2/2	Christian Science	Intact	Withdrawn	103	Home
4.....	15	F	1/1	Assembly of God	Intact	Withdrawn	125 (5 EST)	Home
5.....	15	F	1/1	Jewish	Disrupt	Withdrawn	85	Home of Rel.
6.....	15	F	6/7	Baptist	Disrupt	Withdrawn	58	Home of Rel.
7.....	15	M	1/4	Nazarene (Mex.)	Intact	Excited	83 (11 EST)	Home
8.....	16	M	1/2	Catholic (Mex.)	Father died when 5	Excited	50	State Hosp.
9.....	16	F	2/2	Jewish	Mother died when 11	Withdrawn	87 (18 EST)	Home
10.....	16	F	1/1	Catholic	Disrupt	Withdrawn	69	Home of Rel.
11.....	16	M	2/2	Church of God	Div. when 2	Excited	23	Home
12.....	16	F	2/4	Jehovah Witness	Disrupt	Withdrawn	97	Residential
13.....	17	M	2/2	Baptist (Negro)	Disrupt	Withdrawn	81 (6 EST)	Home
14.....	17	M	1/3	Lutheran	Intact	Excited	87	Home
15.....	17	M	3/3	Assembly of God (Convert at age 15)	Disrupt	Excited	78 (11 EST)	Home
16.....	17	M	1/4	Meth.-Catholic	Intact	Withdrawn	39 (10 EST)	Home
17.....	17	F	1/1	Evangelical/Nazarene	Disrupt	Withdrawn	88	Home
18.....	18	M	4/4	Catholic (Mex.)	Disrupt	Excited	35	Home of Rel.
19.....	19	M	1/1	Catholic (Negro)	Disrupt	Excited	60	Home
20.....	19	F	1/1	Catholic	Disrupt	Excited	72 (4 EST)	Residential
21.....	19	F	4/4	African Baptist (Negro)	Intact	Excited	44	Home

termite, an ant, a fly or a flea. During this period she made many attempts to leap at him from her bed with legs apart as if to straddle him.

CASE 6. The patient was a 15-year-old white girl who was quite disheveled and whose face was a mask of terror. When she was not curled up in her bed, she would stand in the hall and make abrupt dashes to the drinking fountain, where she engaged in a ritual of dousing her hair and clothes, gargling water and spitting it out, repeatedly slapping her face and reiterating, "Bad D . . . my name is D . . . C . . . P." A frequent accompaniment to this stereotypic behavior were attempts to disrobe, all the while muttering, "Bad D . . ."

The following case excerpt illustrates a catatonic excitement reaction and includes some socio-cultural background.

CASE 7. A 15-year-old white boy was brought to the hospital because he had been going about the street accosting girls and making verbal sexual advances to them. When seen at the hospital he looked like an overgrown puppy. He spoke in a loud, raucous monotone and asked over and over for the staff to get him a girl to "f . . ." All of his speech and motor behavior were repetitive. On the ward he spent his time either in his bed or in approaches to any and all females. He wanted to touch them, to kiss them, to have intercourse with them—all of this behavior in a pleading, childish,

incongruent and annoying way. He was resistive to attempts to curb this behavior. He wanted to masturbate but said he couldn't because he would go crazy if he did.

The oldest of four siblings, he was said to have been, up to three months before admission, a quiet, good boy who had made good grades in school, spoke little and had few real friends. Then he began expressing fear that blood was being drained from his body, and at about this time he told his mother that the boys at school were telling him that "girls are to screw." He began to make sexual attempts with his sisters, ages 11 and 8. He told his mother that she had "nice tits and ass" and he tried to get into the shower with her.

The mother, whose name was Maria, was born and raised in Mexico, the daughter of a Nazarene minister. Her father had sexual relations with her older sisters and had seduced her in adolescence. He preached to her that men were no good, for all they wanted was sex from a woman. Then he would try to persuade her to have intercourse with him as the cure for her nervousness and her acne. She had two nervous breakdowns in her adolescence and was so distraught by her father's sexual advances that she would at times wear open safety pins in her underwear, as a defense against her father's sexual advances.

The patient's father's name was Moses and he, too, was of Mexican descent. For the previous 12



years he had worked the 3 to 11 p.m. shift as a printer. He seemed to be an inadequate man who constantly felt himself to be sexually unattractive and ineffective. Frequently he would tell his wife to get a good man like "Joe the butcher." Through all of this the family were strict members of the Nazarene church. The father's ignorance and fear about sex were further displayed in his acquiescence to his wife's repeated demands that when he was home he was to stand outside the bathroom door whenever the patient went to the bathroom to be sure that the patient did only his toilet "duty."

Five years before the patient's admission to the hospital the family decided to quit the Nazarene church because it was too fundamentalistic. It barred going to the movies and dancing. They joined the Methodist church but they were unable to effectively alter their attitudes which were so pervaded with fear, misinformation and guilt.

#### TREATMENT

Our treatment plan was based on the hypothesis that body behavior seen in the catatonic reaction of adolescence is an attempt to limit physical contact (either internally arising or externally offered) and that it grows out of the inability to successfully handle the sexual stresses of adolescence. Those sexual stresses are heightened by the socially induced conflict that grows out of the fundamentalistic religious attitudes and their incompatibility with the physiologic and paracultural environmental attitudes to which the adolescent is exposed.

The plan of treatment was directed toward offering the patient *defined* body contacts that would never lead to sexual behavior, thereby reassuring him that body contacts could be safe and appropriate. We conjectured that if this were successfully communicated to the patient, then the postural attitudes and verbal stream would move in the direction of greater erectness and directness, thereby facilitating the psychotherapy transactions aimed at education, clarification and evolution toward a healthier maturity.

The specific types of body contact that we used included the following:

1. Shaking hands each time the adolescent was seen.
2. Sitting close to the patient.
3. The frequent and judicious use of putting one's arm around the patient's shoulder in a clearly defined "supporting" gesture. This maneuver was used particularly where direct encouragement of the patient's participation in some activity was desired—for example, when trying to get the patient to go to the table for a meal.

4. Holding the patient's hand during the course of attempts at communication.

5. Such other defined physical contacts as suggested themselves as being useful to the patient's relinquishing safely the catatonic behavior and posture.

We have an active activities program on the ward that includes impromptu evening dancing, biweekly ward parties, television, record player group singing. The heterosexual makeup of the ward population offered continuing reassuring evidence of a variety of approved body contacts.

We introduced the families of the patients to the ward milieu and found that more often than not parents of acutely mentally disturbed adolescents responded with relief to our explicit and implicit offers at taking over the attitudinal control of their offspring. So they offered no resistance to seeing their children in a setting where the old taboos and restraints of no dancing and no movies did not pertain—where, indeed, the approved behavior was the "doing" of so many of the old "don'ts". Seeing this response, we used joint family interviews with parents, patient, therapist and social worker as a setting for reenforcing the sanction to explore new (hitherto forbidden) attitudes and the behavior incident to them.

Electroshock therapy was used as adjunctive treatment in seven cases, but only after a trial of psychotherapy for two to six weeks. In four of the cases catatonic excitement was becoming exhaustive for the patient and disruptive to the ward (Cases 4, 7, 15 and 20 in Table 1). The other three patients who had electroshock therapy were in a state of catatonic withdrawal in which weight loss and refusal to eat persisted. The number of electroshock treatments given ranged from four to eighteen.

#### DISCUSSION OF OBSERVATIONS

Sexual conflict situations were prominent factors in the evolution of the catatonic reaction. Sexual behavior or impulses that were incompatible with the fundamentalist or otherwise orthodox religious orientation of the family were regular features in most of the cases in the present series. Incest was a factor in four of the female patients and masturbatory guilt was a prominent reaction in the remainder of the patients. Sex education was mostly misinformation and threats of dire consequences for sexual activity. Mostly sex education was not given.

Fourteen of the cases involved broken homes for significant periods of childhood or early adolescence, and all the patients were from the low and very low middle income group. Nine of the patients came from fundamentalist church backgrounds;

five with Catholic affiliations had parochial schooling with transfer to public schooling during the period of adolescent emergence. Two patients come from very poor orthodox Jewish homes in which there was serious mental illness in both parents. In seven instances the patient was an only child. The socio-economic-cultural axis of factors described occurred with such frequency as to suggest possible etiologic relationship to the precipitation of the catatonic reaction of adolescence. More definitive studies are planned in order to evaluate this suggested correlation.

We conjectured that sexual conflict situations grow out of incompatible socio-cultural attitudes and normal adolescent psychological and physiological drives. We defined catatonic reactions as those schizophrenic reactions in which the body behavior and posture is the primary device whereby the patient seeks to fend off impulses arising internally, directed toward physical contact with objects outside the person, as well as serving as protection from contacts in the environment. From these hypotheses we formulated the "defined body contact" technique (described earlier in this communication) as a means to reverse the reaction. Obviously there are many variables that cannot yet be defined, let alone accurately assessed—among them the fact that nine different resident psychiatrists participated as therapists and each had his own way of using the "defined body contact" technique. The notion of shaking hands with a patient everytime he was seen was at first "too unpsychoanalytic" for some of our residents. The contacts with the many other ward personnel cannot at this time be standardized. It is an interesting observation that none of the attractive female patients had to have electroshock therapy, and it is more than just speculative that it was much more difficult to adopt the posture of closeness to the unattractive, deteriorated patients. There are many more variables that need study and control.

A brief comment is in order about the family interview in which therapist, social worker, parents and patient participated. We found these interviews extremely useful as a means of eliciting or evoking

the mutual ambivalence of parents and patient toward one another into the conscious realm. When this occurred, both parties seemed more able to consider compromise positions, and this facilitated the patient's return to more normal risk-taking stances.

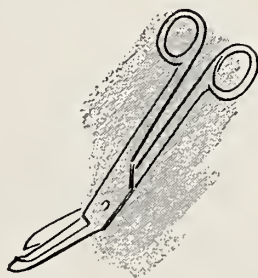
Only one patient in the group was sent to a state hospital. He was the first patient with catatonic excitement with whom we had to deal, and his behavior was so disruptive to the ward and our reluctance to use electroshock in such cases was at that time so great, that we recommended transfer to a state hospital after he had been only 50 days on our ward. As a side note, we learned that he received about a half-dozen electroshock treatments and was discharged from the state hospital soon thereafter.

All the patients returned to their homes or to non-institutional residences. The length of stay in the hospital in most cases was extended beyond the time we felt was actually necessary, in order to further prepare the outside environment to which the patient was returning.

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# Insanity and Criminal Offenders

## Some Comments on the Report of Governor's Special Commissions on Insanity and Criminal Offenders

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THE PUBLICATION of the report by the Governor's Special Commissions on Insanity and Criminal Offenders<sup>8</sup> has focused the attention of the medical and legal professions in California upon the difficult and highly controversial tests of insanity. This preliminary report by the Commissions provides not only an excellent summary of the historical development of the existing laws regarding insanity but, more importantly, specific recommendations with explanations for the recommended changes. The Commissions are to be commended for their thorough and painstaking investigation of the problem of criminal responsibility of persons afflicted with mental diseases or disabilities.

On the basis of these specific recommendations by the Commissions, those of us who have been deeply interested in this problem have an opportunity to review and compare our thinking with the recommended proposals. The report of the Commissions specifies two basic objectives: "The first, to provide more adequate safeguards for the protection of the public, and the second, to bring the law insofar as possible, into conformity with the advances of modern psychiatry."

To accomplish the first objective, they recommend committing dangerous mentally disordered persons to institutions organized to maintain them in secure custody. For the second objective, it is necessary to consider the rules defining the criminal responsibility of those whose mental condition is in question. According to the Commissions, the crucial issue is to distinguish between offenders who are blameworthy and regarded as criminals and those who are not, whether an offender is condemned, or whether because of mental disorder he should be recognized as not accountable as a criminal. In accordance with this concept, punishment is justly due if the miscreant is mentally responsible. The difficulty is in determining whether the offender is to be held responsible.

<sup>8</sup> Submitted March 7, 1963.

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• The definition proposed by the Commissions on Insanity and Criminal Offenders for determining criminal responsibility will not resolve the issue between offenders who are considered blameworthy and regarded as criminals and those who are not. No formula is satisfactory for differentiating responsibility and irresponsibility. Determinism, which is the fundamental tenet of all science, is violated by the assumption that an individual can wilfully elect to commit an act which, in fact, is the result of causal antecedents. This concept is in conflict with the basic premise of criminal law that an individual is considered criminally responsible unless it can be proved to the contrary.

Since it is unlikely that any proposal to abolish the concept of criminal responsibility would be even considered, it is suggested that no definition be used at all. Laws similar to those for the disposition of the mentally ill could be enacted, with emphasis not on the concept of criminal responsibility and moral blameworthiness but on the offender's dangerousness to others, the disposition then being planned to fit the offender rather than the offense.

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In the past, a person has not been held responsible for a crime if he is found to be insane, a lunatic, an idiot or a child under fourteen years of age. Otherwise, the law assumes that he is capable of forming specific intent to commit a particular crime unless it can be demonstrated that he is not capable of forming this intent. For a verdict of first degree murder, the prosecution must prove malice. The accused, in accordance with Section 188 of the California Penal Code, must have an "abandoned and malignant heart."

Under the present laws, the question of the mental illness of a person charged with a criminal offense has no direct bearing on the question of his criminal responsibility. An adjudication of mental illness may be entirely unrelated to the issue of criminal responsibility. In fact, although the M'Naghten formula is used for the test of insanity, there is no actual definition of mental illness. In Section 5040 of the Welfare and Institutions Code "mentally ill persons" are defined as:

"(a) Who are of such mental condition that they

are in need of supervision, treatment, care, or restraint.

“(b) Who are of such mental condition that they are dangerous to themselves or to the person or property of others, and are in need of supervision, treatment, care or restraint.”

Obviously this is not a definition of mental illness but a legal provision for the disposition of persons considered to be mentally ill by the court upon the recommendation of two medical examiners. Evidently it has not been necessary to define the meaning of mental illness. Perhaps it might not be necessary to define insanity if legal provisions were made for the disposition of persons found to be dangerous regardless of their mental condition.

Probably the most famous satire in the English language is *Erewhon* (nowhere) by Samuel Butler, originally published in 1872. In this fable, the sick are blamed for their illnesses, punished and imprisoned in accordance with the severity of their illnesses while the criminals are cared for and hospitalized. The more violent the crime, the more attention and sympathy the “criminal” receives.

This reversal of moral attitudes may not be the solution. However, the story emphasizes that attitudes toward crime and punishment are the products of a culture in which a particular set of values is justified and rationalized by a sense of moral righteousness. There is no innate sanctity in man-made laws, particularly when promulgated under the aegis of bygone concepts of retribution and retaliation which are inhumane and vindictive. In the slow process of social evolution, there is a gradual recognition that a human being does not wilfully acquire an “abandoned and malignant heart,” and that there is some cause for this “malicious” behavior in the life history of an individual.

By the tremendous force of his personality, as well as his sincerity, one of the greatest trial lawyers of the twentieth century, Clarence Darrow, advocated and was able to convince juries of strict determinism. The following quotation from Darrow in Irving Stone's<sup>9</sup> biography of the lawyer is precisely to the point:

“That man is the product of heredity and environment and that he acts as his machine responds to outside stimuli and nothing else seem amply proven by the evolution and history of man. Man's every action is caused by motive. Whether his action is wise or unwise the motive was at least strong enough to move him. If two or more motives pulled in the opposite directions he could not have acted from the weakest but must have obeyed the strongest. This is not a universe where acts result from chance. Law is everywhere. Every process of nature and life is a continuous sequence of cause and

effect. There is cause for the eternal revolution of the earth around the sun. for the succession of seed time and harvest, for growth and decay and for the thoughts and actions of man.

“Before any progress can be made in dealing with crime the world must fully realize that crime is only a part of conduct; that each act, criminal or otherwise, follows a cause; that given the same conditions the same result will follow forever and ever; that all punishment for the purpose of causing suffering or growing out of hatred is cruel and antisocial; that, however much society may feel the need of confining the criminal, it must first of all understand that the act had an all-sufficient cause for which the individual was in no way responsible and must find the cause of his conduct and, so far as possible, remove the cause.”

Mr. Darrow was not a social scientist or a psychiatrist but a lawyer whose long experience with criminals had convinced him that they were the helpless victims of their own drives and impulses.

At present, in California, the formula for determining criminal responsibility is the M'Naghten Rule: “. . . to establish a defense on the ground of insanity, it must be clearly proved, that at the time of the committing of the act, the party accused was laboring under such a defect of reason from disease of the mind, as not to know the nature and quality of the act he was doing or, if he did know it, that he did not know he was doing what was wrong.” In place of this, The Commissions have proposed to substitute the following definition: “A person is not criminally responsible for an act if, at the time of the commission of such act, as a substantial consequence of mental disorder, he did not have adequate capacity to conform his conduct to the requirements of the law which he is alleged to have violated.”

Objections have been raised to the use of the M'Naghten rule on the basis that the definition is too obscure and not in keeping with modern knowledge and advances in the field of psychiatry. As a matter of fact, the definition is quite clear. Reduced to modern phrasing, a man is insane if he did not know what he was doing or, if he did, he did not know it was wrong because he was mentally ill. There is nothing obscure about this definition. It is simply not broad enough for modern use. When a man has a gun which he points at someone and then pulls the trigger, he certainly “knows” what he is doing and almost invariably he “knows” that it is wrong. However, in our enlightenment, we “know” that he does not really “know” and if he is mentally ill we testify that he does not “know.”

Davidson<sup>4</sup> emphasizes that the test of responsibility in modern criminal jurisprudence is not



whether the offender "knew right from wrong" but whether he knew that his particular act was wrong, and that he knew society considered the act wrong and not that he himself considered it wrong. However, even this clear delineation of the M'Naghten rule does not prevent the confusion and disagreement of interpretation in the courtroom. When a battery of opposing attorneys examines a flock of experts, each of whom is attempting to interpret this definition in accordance with his own experience and bias, and with the litigious contentions of the lawyers and the scientific pretensions of the physicians, the original meaning of the formula is lost in the confusion of medical interpretations and legal technicalities.

Since 1921, Massachusetts has used automatic pre-trial psychiatric examinations of certain specified criminal defendants. This is done under the Briggs Law, which orders that any person who is indicted for a capital offense or who has been previously convicted of a felony be examined with a view to determining his mental condition and the existence of any mental disease or defect which would affect his criminal responsibility. It has also been suggested that such persons might be hospitalized for observation before trial. Both procedures might reduce "the battle of experts," the quantity of partisan expert testimony and the unofficial trial of the experts by the daily newspapers.<sup>3</sup>

In addition to the definition proposed by the Commissions, alternative definitions of merit such as the Durham, the Currens and the American Law Institute's Model Penal Code have been proposed. In each of these formulations, there is the same difficulty in drawing the line between responsibility and irresponsibility. If the definition proposed by the Commissions or any of the others were written into the law, the problem of determining the individual's criminal responsibility would remain just as difficult if not more difficult than it is under the M'Naghten rule.

The psychiatrist assumes that for every act there is a cause or causes, conscious or unconscious, and that the individual's behavior is motivated by the sum total of his experiences and influences, internal or external, acting upon him. It is presumed, therefore, that there are causal factors for every act. To assume that a human being can be influenced by the sum total of his experiences and not be determined by them, although this concept is generally accepted by the public, is unscientific and contrary to the fundamental principles of causality. In the case of a mentally ill or a psychotic person, the causal factors result in a disorder of thought, feeling or behavior. Likewise, in the case of an individual whose acts are considered criminal, causal factors are presumed to have motivated the act. If this

concept were to be completely accepted, it would lead to a strict deterministic point of view in which the individual could in no way be held responsible for his behavior as his behavior would be the product of past experience and forces acting upon him over which he had no control. However, as Weihofen<sup>10</sup> pointed out: "Any proposal to abolish the concept of criminal responsibility directly challenges our traditional moral philosophy with regard to crime. . . . And while it may be true that the irresponsible offender must also be taken into custody, this is merely for the protection of society and of himself, and not as punishment for crime." Whereas with the "criminal," as he indicated, the public is still more concerned with the concept of moral blameworthiness than with the individual's social dangerousness.

Judge Bazelon<sup>1</sup> (author of the Durham decision) considers the core of the problem is man's inhumanity to man, in each of us and in the history of all of us. And he goes on to say: "Its insolubility has been sanctified by history. . . . One doesn't have to be a wild radical to see this problem as one which calls for top-to-bottom re-thinking. As Morris Cohen reminds us, 'It was the conservative President Taft, later Chief Justice of the United States, who characterized our criminal law as a disgrace to civilization.'"

Since it is unlikely that society will accept a strict deterministic point of view in the foreseeable future, the issue is reduced to either the acceptance of one of the several definitions of insanity or no definition at all. If a definition is to be used, it should define mental disorder in such a way that it is quite clear that a person so disordered is incapable of forming intent. For the psychiatrist, this is not easy; in fact, it is virtually impossible for him to accept the premise that a person did not have the capacity to commit a crime which in fact he did commit. On the other hand, the psychiatrist by training and experience can contribute explanations regarding the person's state of mind and motivations for an act. The fact that the person's unlawful act is the product of mental disease or defect (Durham rule) or the substantial consequence of mental disorder (Commissions' recommendation) may be evident to the expert but when he is expected to consider the issue of responsibility in this context, he is confronted with the problem of causality. Within the limits of the scientific approach, whether the person is mentally disordered or not, in accordance with the principle of cause and effect, the effect (or act) could not have been other than what it was. Confronted with this dilemma, the expert must ignore this basic tenet of science and concur with the usual non-scientific attitude that the person could have done other than he did if he had *chosen* to do so,

unless he was too sick to choose to do what he did. At this point, the expert's opinion is no longer consistent with scientific principles and he is making a judgment as to value on the basis of his own preconceived ideas of free choice. The expert has stepped out of his orbit and has intruded upon the domain of the judiciary, which has by law and the consent of the governed the privilege of making such judgments.

According to Perkins,<sup>6</sup> . . . "no cause will receive juridical recognition if the part it played was so infinitesimal or so theoretical that it cannot properly be regarded as a substantial factor in bringing about the particular result—'*de minimis non curat lex*' (the law is not concerned with trifles).'" Realistic as this attitude may be for the law, science does have an obligation to give consideration to every possible cause, no matter how trifling it may seem, in accordance with the principles of scientific investigation. And although the law may accept the proximate (legal) cause on a direct cause-effect basis, the explanation for human behavior cannot be limited and restricted thus arbitrarily. Scientifically, an act is not the result of one specific cause but the sum total of causes in the life history of the individual.

The courts in California now allow the man's state of mind at the time of an offense to be admitted for consideration in reference to the facts before a verdict of guilt is reached. This permits a presentation of the man's mental condition by expert testimony in the first portion of a trial. The court and the jury have an opportunity to hear not only the facts but also the expert's opinion as to the defendant's state of mind and mental condition at the time of the alleged offense before reaching a verdict. The admission of this evidence provides opportunity for the presentation of psychiatric observations pertinent to the case whether or not a plea of not guilty by reason of insanity has been offered by the defense.

This increased latitude on the part of the courts in California provides the medical expert with an opportunity to present his scientific observations of the defendant. Having related his findings in reference to the psychodynamics, the conscious and unconscious motivations, the causal factors, the state of mind and affect of the defendant, the psychiatrist has covered the field of his expertise. As Judge Pulich<sup>7</sup> (formerly Public Defender, Alameda County) succinctly stated in the open meeting before the Commissions: "The doctor should come into the court, present the medical picture and depart." The decision of determining the degree of responsibility should be left to the judiciary, which represents the society for whom the laws exist. As Judge Bazelon<sup>2</sup>

said: "When the psychiatrist goes one inch beyond his competence as an investigator and goes into the realm of being a soothsayer, he is misleading and distorting the entire process, and he is not serving the role that he is supposed to be serving."

In 1953, the British Royal Commission recommended that the M'Naughten rules be abolished and that it be left to the jury to "determine whether at the time of the act the accused was suffering from disease of the mind or mental deficiency to such a degree that he ought not to be held responsible."<sup>5</sup> While this would relieve psychiatrists of forming an opinion regarding criminal responsibility, it places the burden on the shoulders of the jury who, although perhaps ethically responsible (if someone must be considered responsible) are probably poorly qualified by training and experience for this judgment.

Not only are the concept of scientific determinism (which is the basic tenet of scientific investigation) and the concept of legal responsibility (which is the basic foundation of legal structure) theoretically absolutely irreconcilable, but from the practical viewpoint it is indeed discouraging to realize that no definition of insanity will work. As long as some rule of insanity is used, the experts will continue to disagree. Even if the decision were left entirely to the jury, the basic difficulty inherent in the proposition of moral judgment, of human beings evaluating and condemning others on the basis of their preconceived ideas of right and wrong, the problem would be unchanged.

Ultimately, if the situation is ever changed, our culture must give up the concept of retribution and punishment for the sake of revenge. Human beings, whether or not they exhibit behavior considered sick or criminal, are the products of this civilization. If possible, they should be treated. If untreatable, they should be isolated, not for the sake of punishment, but simply because they have demonstrated by their behavior that they are dangerous to others.

Therefore, regarding the specific recommendations of the Commissions, I would urge reconsideration of the definition of insanity. Possibly, laws similar to those for the disposition of the mentally ill could be enacted, with emphasis not on the concept of criminal responsibility and moral blameworthiness but on the offender's dangerousness to others, the disposition then being planned to fit the offender rather than his offense.

Although opinions contrary to the recommendations of the Commissions have been expressed here, this is in no way a reflection on the efforts which they have made to work out satisfactory solutions for the most difficult medical-legal problems inherent in the concept of insanity. It is my sincere hope that



the Commissions will be permitted the opportunity to continue their fine work, and that others will be given the same opportunity for constructive criticism.

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### HOTEL ROOMS FOR C.M.A. ANNUAL SESSION

*March 22 to 25, 1964*

**PLEASE NOTE:** The Biltmore Hotel will not guarantee sleeping rooms unless reserved before March 9, 1964. Make your reservations now. For hotel reservations, turn to page 351.

# Influence of the Environment on the Unborn

IAN W. MONIE, M.B., Ch.B. (Glas.), San Francisco

THROUGHOUT OUR LIVES we are constantly reacting to the environment in which we live. Heat, light, atmospheric pressure, terrestrial and extraterrestrial radiation, gravity, microorganisms and the multitude of chemicals contained in food, water and air are continually acting upon us, determining our constitutions and our destinies. At one time it was felt that the mammalian fetus was relatively sheltered from the effects of such environmental factors but careful clinical and experimental studies have now shown this belief to be untenable.

While the mother does afford protection to the unborn in many ways—for example, by detoxifying noxious substances and by destroying microorganisms which would be harmful were they to reach the young—this is secondary to the preservation of her own organism. Where the agent is not harmful to the mother and protective reactions are absent, the effect on the embryo can be disastrous. Indeed, the majority of teratogenic (malformation-producing) agents or procedures belong to this category and are especially destructive in the early stages of gestation. Thus, rubella, if contracted by the mother during the first trimester, causes little maternal upset but may result in serious eye, ear and cardiovascular malformations in the embryo.<sup>11</sup> Again, maternal ingestion of thalidomide, a glutamic acid imide that once was supposed to be a harmless sedative, has recently been linked with a syndrome of phocomelia, cavernous angioma and duodenal stenosis in the offspring.<sup>17</sup>

## The Maternal and Embryonic Environments

The unborn has to contend with three environments. The one with which it is in immediate contact, consisting of the amniotic fluid, the placenta and membranes, has been designated the *microenvironment* by Warkany.<sup>7</sup> The maternal body may be called the *macroenvironment*, and the surroundings of the mother, the *matronenvironment* (Figure 1). Substances inhaled or ingested by the

• Embryonic development is influenced by three environments: the intra-uterine, the maternal body and the maternal surroundings. Factors present in one or other may cause abnormal development.

Usually environmental factors act in association with genetic factors but they can be the dominant or sole cause of birth defects.

Many malformation-producing agents exist in the maternal environment and some cause abnormalities in man. Use of such agents in experimental animals yields valuable information on how malformations develop.

Different species and strains of animals often react differently to the same teratogenic agent, leading to difficulties in screening substances which may be harmful to human embryos.

Laboratory experimentation, detailed study of human abortion material and the vigilance of the physician are all essential in the search for human teratogens.

mother from the matronenvironment may reach the embryo unchanged, or may produce changes in the macroenvironment or microenvironment which are

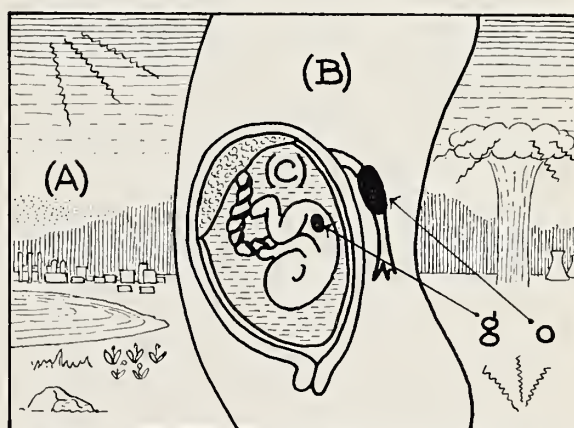


Figure 1.—The maternal and embryonic environments. (A) the *matronenvironment* consisting of the physical and chemical components, and the animal and plant life, in the surroundings of the mother. Radiation from outer space, the earth, and man-made sources is indicated by wavy lines; (B) the *macroenvironment* or maternal body; (C) the *microenvironment* composed of the placenta, membranes and amniotic fluid. (B) and (C) constitute the embryonic environment.

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TABLE 1.—Some Factors Which Produce Malformations

In Animals		In Man
Physical.....	Radiation, hypothermia	Radiation
Chemical:		
Hormones.....	Insulin, cortisone, androgen, estrogen, epinephrine	Sex hormones
Antigrowth factors.....	Nitrogen mustard, chlorambucil, azaserine, 6-mercaptopurine	?
Other.....	Trypan blue, quinine, hypoxia, salicylate, colchicine, iodine deficiency, antibiotics	Thalidomide
Nutritional:		
Deficiency.....	Vitamins A, B <sub>12</sub> , D, E,* folic acid (PGA*), pantothenic acid,* nicotinic acid,* riboflavin*	Aminopterin†
Excess.....	Vitamin A	.....
Other.....	Starvation	.....
Micro-organismal.....	Hog cholera, influenza A, Newcastle virus	Rubella, syphilis, toxoplasmosis

\*Vitamin antagonist employed alone or with deficient diet.

†A folic acid antagonist.

ultimately experienced by the embryo. It is also possible for substances to pass from the macroenvironment and accumulate in the microenvironment in large enough amounts to cause embryonic damage. In the case of radiation the embryo may be directly affected, or it may be affected by the products of reaction with the macroenvironment.

#### Environment and Genetic Factors

Nineteenth century experimental embryologists clearly showed that environmental change could disturb development both in invertebrates and in lower vertebrates, and by the beginning of the present century considerable attention was being directed to abnormal intrauterine conditions as causes of malformation and abortion in man.<sup>2,18</sup> However, the importance of inherited factors in the normal and abnormal development of mammals was now appreciated and the significance of the environment gradually became subordinated to that of the germ-plasm; this concept generally prevailed until the early forties.

Nevertheless, during the period when genetic factors were considered of primary importance in the causation of congenital abnormalities, reports continued to appear on the influence of the environment on the unborn. It became evident, for example, that x-irradiation<sup>13,14</sup> or radium treatment of the mother during pregnancy could result in fetal death or deformity, and that lack of iodine in pregnant sows resulted in reduced litter-size.<sup>27</sup> Cleft palate<sup>3</sup> was frequently seen in whelps of captive lions unless the mothers were fed goat flesh and soft bone during pregnancy, while sows receiving a vitamin A-deficient diet produced piglets with eye defects<sup>12</sup> and other malformations. However, it was not until 1940 and the publication of a study by Warkany and Nelson<sup>28</sup> showing that pregnant rats fed a deficient diet (later shown to be riboflavin deficiency) produced young with skeletal and other abnormalities, that attention was again seriously directed to the

influence of the environment on mammalian development. The teratogenic effect of rubella on the human fetus observed soon after this gave further impetus to the renewed interest in environmental factors; since then a host of teratogenic agents or procedures has been discovered (Table 1).

Today, however, it is generally agreed that the majority of congenital abnormalities result from the interplay of *both* genetic and environmental factors<sup>9</sup> although in certain instances one may play a much more important role than the other. Since there is no apparent structural difference between congenital abnormalities produced by genetic and by environmental factors, in many cases it is difficult to determine which is of primary or sole importance.

In addition to malformations resulting from environmental or genetic factors, or to a combination of these, it is now known that abnormality of chromosomal number is responsible for such conditions as Turner's and Klinefelter's syndromes, and for mongolism. What role, if any, environmental or genetic factors play in the determination of such chromosomal disturbance has not yet been determined.

#### Teratogenic Agents—Timing and Specificity

It would appear that either an excess or an insufficiency of almost any chemical or physical agent can, in certain circumstances, result in defective embryonic development; thus, either maternal insufficiency<sup>31</sup> or excess<sup>5</sup> of vitamin A produces abnormal rat young when occurring at a particular stage of pregnancy.

The time of introduction of a teratogenic agent is especially important, the embryo usually being most sensitive when the principal body systems are being established; in man, this is between the third and eighth week, and in rats during the second week of gestation (parturition occurs on the 22nd or 23rd day). In the later stages of pregnancy the fetus is much less sensitive but by no means immune to

environmental influence; thus, in man, toxoplasmosis can produce hydrocephaly, and syphilis a variety of malformations in the later stages of gestation. Also, in rats the giving of 6-aminonicotinamide (6-AN), a nicotinic acid antimetabolite, as late as the 19th day of gestation can produce hydrocephaly in the young.<sup>4</sup>

Generally, when a teratogenic agent is given very early in gestation it either does not disturb the conceptus or it destroys it entirely, while, if given late in pregnancy its effects may be greatly reduced or absent; there is consequently a critical time for each agent during which maximum damage to the conceptus will result, and this varies with the species involved. In the case of thalidomide, for example, it has been observed that the human embryo is most sensitive between the 27th and 43rd days after conception.<sup>17</sup>

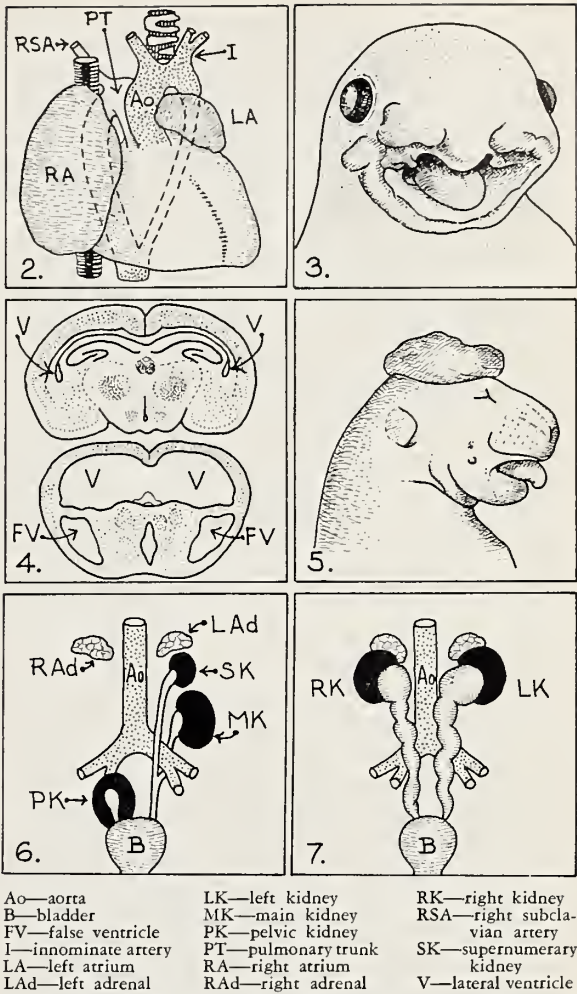
While the time of introduction of the agent is undoubtedly of importance, there is generally mounting evidence that certain agents have a predilection for one or more systems or regions of the embryo.<sup>30</sup> This is suggested, for example, by the preponderance of limb damage in human fetuses by thalidomide, and by the frequent absence of the kidney in rat young from chlorambucil.<sup>23</sup> On the other hand, certain teratogenic factors, such as maternal folic or pteroylglutamic acid (PGA) deficiency,<sup>10,25,26</sup> are associated with a broad spectrum of malformations and are considered "universal" teratogens.

The employment of teratogens in experimental animals is exceedingly valuable for studying the pathogenesis of many congenital abnormalities, and different defects can be produced by varying the time of action of the same agent, or by using different agents (Figure 2). Thus, a transitory PGA-deficiency in rats from the 7th to 9th day of gestation produces many abnormalities of the brain and eye; from the 9th to 11th day, mainly cardiovascular abnormalities;<sup>1,21</sup> and from the 10th to 13th days, principally urogenital malformations.<sup>22</sup> However, if it is desired to study dextrocardia or transposition of the great vessels, trypan blue<sup>8</sup> is the agent of choice, as it provides a much higher incidence of these anomalies than maternal PGA-deficiency.

### Human Teratogens

Of the great number of agents or procedures recognized as teratogenic in mammals, only a few are definitely known to affect humans. Proven teratogenic agents in man are: rubella, sex hormones, aminopterin (4-amino PGA), toxoplasmosis, radiation and thalidomide (Table 1). Many other chemical substances, physical factors and microorganisms are suspect but absolute proof is lacking.

It is sometimes stated that experimentally produced congenital malformations are caused by dos-



Figures 2-7.—Congenital abnormalities resembling those occurring in man produced in rat young as a result of trypan blue (Figure 2), and folic acid (PGA) deficiency (Figures 3-7) during pregnancy; (2) Transposition of the great vessels and double aorta; (3) Facial defects and cleft palate; (4) Control and hydrocephalic brains from three-week-old rats; (5) Exencephaly, micrognathia, and glossoptis; (6) Pelvic and supernumerary kidneys; and (7) Bilateral hydronephrosis.

ages of teratogenic agents at levels much greater than ever experienced by man. In many instances this is probably true but the effects of combinations of small amounts of teratogens cannot be overlooked and work on this important aspect is now proceeding.<sup>6</sup> Preliminary results indicate that certain combinations of low dosages of teratogenic agents have an adjuvant effect on the production of malformations while others seem to show a protective effect. The problem, however, is complex and requires more detailed study.

### Pathogenesis of Malformations

The ability to produce abnormal embryos in animals by means of teratogenic agents has made it



possible to obtain more accurate information on the genesis of many malformations. Thus, absence of a kidney is not always the result of primary renal agenesis but may be due to degeneration of the metanephros secondary to maldevelopment of the ureter or the Wolffian duct;<sup>23</sup> again, renal ectopia can result from retarded growth of the vertebral column.<sup>22</sup> Further, hydrocephaly may follow from retarded development of the cerebral cortex, and closure of the aqueduct result from secondary compression of the midbrain by the distended cerebral hemispheres.<sup>24</sup>

Any congenital abnormality must spring initially from disturbance of intracellular chemistry. Actively dividing cells are the most sensitive to teratogenic agents, although the phase when such sensitivity is maximal varies. Thus, radiation and radiomimetic substances such as chlorambucil cause fragmentation of chromosomes, the cell being most sensitive during the resting phase; colchicine, on the other hand, interferes with anaphase, so that mitosis is incomplete.

The mode of action of many teratogenic agents is uncertain although seemingly relevant facts are known in some instances. Thus, trypan blue, at one time used to treat mange in animals, is highly teratogenic and when injected into pregnant animals rapidly stains the maternal tissues; no similar coloration occurs in the embryo and it has been suggested that it may cross the placenta in a colorless form. However, when injected into pregnant rabbits, trypan blue alters the serum protein content of the maternal blood<sup>16</sup> and it is possible that this may lead, in turn, to abnormal placental transfer and subsequent fetal abnormality. In the case of *PGA*-deficiency the formation of nucleoproteins essential for growth and cell-division is probably disturbed; riboflavin deficiency, on the other hand, possibly interferes with oxidative processes in both the mother and the embryo.

The site of primary damage by a teratogenic agent conceivably may be either the placenta or the embryo; studies on the effect of maternal *PGA*-deficiency, however, have shown that embryonic death precedes placental change, and it is probable that this sequence is common to many teratogenic procedures.<sup>15</sup>

The teratogenic effects of antimetabolites generally can be counteracted by simultaneously supplying an adequate amount of the corresponding vitamin, yet in some instances an entirely different substance may also have an alleviating effect. Thus, in maternal vitamin A-deficiency in rats it has been observed that fetal damage can be reduced by thyroxine.<sup>20</sup> Also, recent studies, again in rats, have shown that thalidomide increases the sensitivity of hemoglobin to oxidation by nitrites and that this

can be prevented by simultaneously giving pyridoxine and riboflavin.<sup>19</sup> In the future, it is possible that teratogenic side-effects of otherwise useful drugs may be prevented by prescribing with them antidotes to their undesired effects.

#### Testing for Teratogenicity

The fact that thalidomide has produced severe malformations in man when no such effects were found in test animals has drawn attention to the difficulties of screening substances for possible teratogenicity in man. Species, and even strain, differences often result in decidedly different responses to the same agent and this undoubtedly is related to genetic make-up.

Even where a drug is non-teratogenic for the majority of humans, there is always the possibility of teratogenic effect in a few individuals on account of their genetic constitution. This, however, is no different from drug sensitivity or post-vaccinal conditions which we are accustomed to anticipate in a small number of cases. New drugs, of course, must be intensively screened in a greater variety and number of test animals than before. This will help to reduce the chance of disaster in man. Also, we should not fail to check the old established drugs, the long-trusted components of the physician's armamentarium. In this regard, the demonstration of teratogenic action by salicylates<sup>29</sup> in rats should be kept in mind. In view of our present knowledge, avoiding drugs of all kinds in the early stages of pregnancy unless deemed absolutely necessary by the physician is obvious.

The quest for information on the causation of malformations also requires the detailed study of aborted human embryos. Too often normality or abnormality is determined by external inspection alone and, since a normal-looking embryo can have severe visceral abnormalities within, a diagnosis is of little value unless based on dissection, and possibly on histological and biochemical studies as well. Detailed examination of such material is time-consuming and requires special skills, but it must be undertaken and, wherever possible, the findings related to the maternal history. The establishment of centers to which human abortion material could be sent for special study would doubtless facilitate such an undertaking.

Lastly, while laboratory studies have an important part in the detection of teratogenic agents, an equally significant role is played by the practicing physician, for by astute observation and careful recording he can, as he has so often in the past, draw attention to actual or potential dangers and open the way to appropriate safeguards.

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## Cancer of the Stomach

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THE MORTALITY RATE of patients with carcinoma of the stomach is still quite high, yet many of these patients could be saved if they were operated upon early in the course of their disease. Cancer of the stomach cannot be cured except by removal of the growth.

It has been reported that incidence of cancer of the stomach is steadily decreasing in the United States.<sup>3</sup> The reason for this is unknown but it may be due to as yet unrecognized environmental factors. At the University of California Medical Center (San Francisco) during the past 30 years 1,043 patients have been admitted with cancer of the stomach (Chart 1). The yearly average admission rate is 33 patients. It is difficult for us to determine from a study of our admission rate whether the incidence of cancer of the stomach has decreased or whether there has just been a decrease in the number of patients who are being admitted to the Medical Center with gastric cancer as more and more well trained surgeons begin to practice in communities formerly without surgical specialists.

The curability of cancer of the stomach should be more widely publicized. Some physicians and many laymen still believe that a diagnosis of cancer of the stomach is the beginning of the end. Cancer of the stomach can be cured surgically if an early diagnosis is made and definitive treatment is instituted. It is my feeling that every patient diagnosed as having carcinoma of the stomach after roentgenologic examination should have surgical exploration unless there is evidence of distant metastasis.

The greatest help in making an early diagnosis is a high degree of alertness and suspicion on the part of the physician when he sees a patient 35 years old or more who has had indigestion for more than one week. The onset of symptoms is very insidious. When a patient has a history of chronic indigestion, loss of weight, weakness or vomiting of any material that looks like blood, careful in-

vestigation is indicated. If a patient complains of weakness and if evidence of severe anemia is found on laboratory examination, carcinoma of the stomach or cecum should be immediately considered and a detailed examination made, including a history, physical examination and x-ray studies. Carcinoma is more likely to develop in a patient who has pernicious anemia than in one who has not. It has been reported that the incidence of gastric cancer in patients with pernicious anemia is 21 times greater than in a normal population.

The roentgenologic findings are still the most helpful in making this diagnosis. If the first roentgenologic examination is negative for cancer and the symptoms continue, x-ray examination should be repeated within a very short time.

Hitchcock and Scheiner<sup>2</sup> recently said that there was no simple method for an over-all population survey. They said that in reviewing the major precursors of gastric cancer, namely, atrophic gastritis, gastric polyposis, pernicious anemia, achlorhydria or hypochlorhydria, it was concluded from a 15-year study at the University of Minnesota Hospitals that the presence of achlorhydria, hypochlorhydria or pernicious anemia should alert the physician to the need for further observation and study for the possible presence of an early gastric cancer.

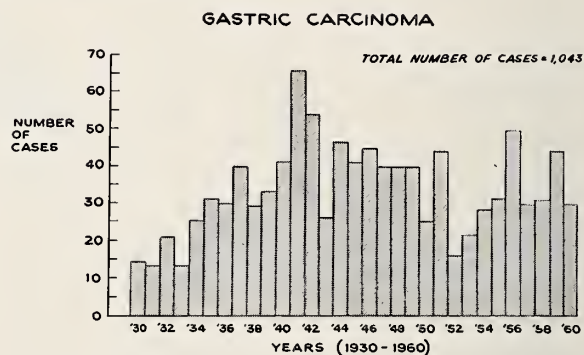


Chart 1.—Showing number of patients with carcinoma of the stomach admitted annually to the University of California Medical Center in San Francisco in the period 1930-1960.

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To appear as part of the revised Cancer Studies.

A gastric analysis is absolutely essential. If evidence of achlorhydria or total anacidity is found, one should be very suspicious of any gastric lesion seen on the roentgenogram. The Papanicolaou method of gastric washings is not entirely satisfactory but newer cytologic techniques are being developed, such as the application of fluorescence and cytologic staining techniques and adaptation of the acridine orange staining method of Bertalanffy to gastric washings. An initial study performed with this method in a fairly large group of patients showed a significant degree of accuracy.<sup>2</sup> We hope that biochemists and cytologists will continue to develop improved techniques for vital staining which will be simpler and more readily applicable to large numbers of the population. Gastroscopic examinations have not been of great value in making the differential diagnosis, particularly in the very ill patient.

Most malignant tumors of the stomach are straightforward adenocarcinomas. Other malignant tumors, such as lymphomas, have a different cure rate and survival rate. A lymphosarcoma may be resected, with cure of the patient, or it may be controlled for a long period by radiotherapy; however, radiotherapy has little if anything to offer to the patient with incurable cancer of the stomach. Benign tumors of the stomach, while they may give symptoms suggestive of carcinoma, are much more easily cured by surgical resection. In many instances the diagnosis cannot be determined preoperatively.

I believe that a patient who has a gastric ulcerative lesion that resembles a gastric ulcer, but who has not shown a very decided improvement within two weeks, should be operated upon because of the possibility that the lesion is carcinoma. Whether the carcinoma has arisen in a gastric ulcer or whether it was an ulcerated carcinoma from the start is still a moot question. In many published reports cancer of the stomach arising in a gastric ulcer had a better prognosis than a straightforward carcinoma without evidence of a gastric ulcer.

The location of the carcinoma of the stomach also influences the survival and cure rates. Carcinoma arising at the pyloric end of the stomach has a higher rate of survival and curability. This may be partially due to the fact that carcinoma at this site is detected earlier because of signs and symptoms of pyloric obstruction. In contrast, carcinoma arising in the cardiac end of the stomach or the body can be present for a long time without giving rise to definite symptoms which cause the patient to see a physician.

The technical procedure for carcinoma of the stomach varies in different university medical centers according to one's own philosophy of the disease. At the University of California Medical

Center in San Francisco we have performed total gastrectomy in 57 cases. None of the patients has survived for more than five years. Of the total group of patients seen in our medical center, 8 per cent survived five years or more. Of the group that had a curative resection 18 per cent survived for five years or more. The resectability rate was 49 per cent. In 20 per cent of the patients, the disease was so far advanced that surgical treatment was unjustified.

I do not advocate total gastrectomy for carcinoma of the stomach. The mortality and morbidity rates are so high and the curability rate so low that I do not feel justified in doing a total gastrectomy. If a wide gastric resection can be done, even though a very small part of the stomach is left, the mortality and morbidity will be less than if total gastrectomy is performed. When I do a subtotal gastric resection for carcinoma of the stomach, if feasible and technically possible I prefer to do a wide gastric resection and a gastroduodenostomy repair rather than a gastrojejunostomy repair. I have found that the dumping syndrome is much less frequent after gastroduodenostomy.

If we could see all of our patients as promptly as was the patient in the following case report, I am certain our cure rate would be much higher.

#### REPORTS OF CASES

Case 1. A 57-year-old man was seen in March 1952 because of a three-day history of indigestion. His physician had obtained an upper gastrointestinal roentgen series which showed a filling defect of the lesser curvature in the prepyloric area. On March 9, 1952, four days after onset of symptoms, subtotal gastric resection with gastrojejunostomy repair was performed. The pathologic diagnosis was adenocarcinoma of the stomach; no evidence of metastasis was found in 38 lymph nodes.

On August 8, 1955, the patient was admitted to the hospital and operated upon for severe symptoms of dumping syndrome. The previous gastrojejunostomy was taken down and a Billroth I anastomosis was performed. This procedure proved to be satisfactory; the patient's symptoms disappeared and postoperatively he gained weight very rapidly.

In November 1957 he returned because of upper abdominal pain consistent with chronic gallbladder disease and possible common duct stones. He was operated upon November 7, 1957, and a cholecystectomy and common duct exploration were performed. At this time we had an excellent opportunity to explore the upper abdomen and found that there was still no evidence of recurrence of carcinoma. He is still alive, well and working.





Figure 1.—(Case 2) Roentgenogram showing carcinoma of the antral portion of the stomach.

The following case illustrates why it is important that patients with pernicious anemia have their stomachs examined at least once a year.

Case 2. A 66-year-old woman was admitted to the H. C. Moffitt Hospital on November 19, 1962, because of x-ray findings of an ulcerative lesion in the antral portion of the stomach.

This patient had been known to have pernicious anemia since 1934. Treatment had brought it under good control. Gastric analysis showed no acid and complete achlorhydria. Her last gastrointestinal series was taken in 1951 and was reported as normal. A cholecystectomy was performed on April 11, 1952, at which time the stomach appeared to be normal.

Eight months before the present admission the patient began to have mild upper abdominal discomfort and fullness after eating. Two months before entry vomiting occurred for the first time.

An x-ray examination was not performed until November 16, 1962; it showed a quite obvious carcinoma of the antral portion of the stomach (Figure 1). At operation a huge carcinoma was found together with involvement of several lymph nodes. The chances for a cure would have been much better if the operation had been performed eight months earlier.

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# **Carcinoma of the Colon and Rectum**

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CARCINOMA OF THE COLON and rectum is the most frequent form of malignant disease of any internal organ common to both sexes. Although the incidence of carcinoma of the large bowel increases with age, 5 per cent of these lesions occur in persons under 40 years of age.

A carcinoma of the colon or rectum originates as a mucosal lesion. At first it causes bowel irritability and bleeding; much later the growth may cause mechanical difficulty, either because of its size or extent of infiltration of the bowel wall. Since there are no pathognomic signs or symptoms of colon or rectal carcinoma, all complaints which direct attention to the bowel demand careful investigation. The signs and symptoms vary according to the site of the lesion.

## **SYMPTOMS**

*Right colon.* The primary function of the right colon is absorptive. The lumen is large and the content liquid. Symptoms of malignant disease are usually the result of secondary effects of the lesion, rather than obstruction. Carcinomas here tend to be large, cellular and ulcerated. They often cause anemia, fatigue and loss of weight. The type of anemia varies, depending on whether its origin is in blood loss or impaired absorption. The patient seldom notices the passage of blood in the stool. Some abdominal discomfort is usually present. This may consist of a sense of fullness or increased weight, or of tightness especially on the right side of the abdomen. Crampy or poorly localized pain is common. If there is a change in bowel habit, it usually consists of more frequent, loose stools.

*Left colon.* Here the basic process is storage, and constitutional symptoms of malignant disease in this area are conspicuously lacking. The dominant symptoms are change in habit and bleeding. Most often there is increasing constipation with abdominal cramps and distention, although sometimes persistent diarrhea is the reason for the patient's

consulting a physician. Occasionally there is a sudden onset of complete obstruction with no prodromal symptoms. About half the patients notice blood in the stool; this may be bloody mucus, streaks of blood, clots or just a trace on the toilet tissue.

*Rectum.* The primary function of the rectum is to signal the defecatory urge. A rectal carcinoma frequently causes a false urge or a feeling of incomplete evacuation after a bowel movement. Characteristically bloody mucus, clots or bright red blood is passed. Pain occurs late. A change in the patient's usual bowel habit occurs frequently.

## **DIAGNOSIS**

Often on general physical examination the patient has an appearance of vitality and wellbeing. This belies the serious nature of the disease causing the minor symptoms for which the physician is (often apologetically) consulted. Abdominal examination may reveal a palpable mass or evidence of distention. Localized signs of peritoneal irritation, simulating appendicitis or diverticulitis, may be present when the lesion is complicated by penetrating infection. Secondary abscess may form, with signs and symptoms which entirely overshadow the underlying neoplasm.

The old definition of a specialist as one who does a digital rectal examination is too often true. There is no excuse for omitting this as part of every general physical examination. The examination should be done with care. For example, some sigmoid tumors that are too high to be palpated through the lumen of the bowel may be felt through the wall of the rectum in the cul-de-sac. This finding must not be confused with metastatic disease or a "frozen pelvis." Barium enema examination should not be done until a digital rectal examination and sigmoidoscopic examination have been carried out.

Sigmoidoscopic examination and biopsy will not only establish the diagnosis in all carcinomas of

To appear as part of the revised Cancer Studies.



the rectum but also in the majority of all carcinomas of the colon. Even though this is a fact, many physicians are guilty of skipping this examination and relying entirely upon barium enema studies, which are not a hundred per cent accurate. Radiologists agree that lesions just out of reach of the examining finger are difficult to demonstrate by x-ray studies. This zone is a blind area, obscured by the bones of the pelvis, by placement of the rectal tube and balloon to introduce the barium and by redundancy of more proximal bowel. Sigmoidoscopic examination is of great value not only for direct visualization of tumors of the rectum and lower sigmoid, but to rule out non-malignant ulcerative disease and at times to verify that blood is actually coming from higher up in the colon. Examination without previous preparation of the patient often gives more valuable information than after laxatives or repeated enemas have been given.

A good barium enema study is not easily obtained. The clinician must work with the radiologist to ensure good preparation of the patient and provide accurate information. The attending physician and the radiologist should review the films and the problem together. Each has much to contribute, and there is less chance that a lesion will be missed or incorrectly diagnosed if they work together. This cooperation will help to prevent doing an upper gastrointestinal x-ray study in the presence of an obstructing colon lesion.

Colon washings and interpretation of recovered cells has not been satisfactorily perfected to include as a diagnostic measure for colon lesions.

#### DIFFERENTIAL DIAGNOSIS

*Right colon.* Symptoms may simulate those of peptic ulcer, carcinoma of the stomach, cholecystitis, renal lesions and various forms of enterocolitis. Granulomas (such as an amebic granuloma), although rare, may closely simulate a carcinoma. Appendicitis, particularly appendiceal abscess, may be easily confused with carcinoma of the cecum. Detailed and, at times, repeated barium enema examination is most helpful in making a differential diagnosis. Carcinoma of the proximal colon ranks in importance with carcinoma of the stomach as a cause of secondary anemia, so investigation of unexplained anemia should include examination of the colon and stomach.

*Left colon.* Differentiation of diverticulitis and carcinoma is a recurring and difficult problem. Carcinoma complicated by inflammation or abscess formation may produce the classical symptoms and signs of diverticulitis with pain, fever, leukocytosis and localized signs of peritoneal irritation. Diverticulitis may produce obstructive symptoms, with

minimal recognizable signs and symptoms of inflammatory disease. Differentiation by barium enema examination is often difficult, sometimes impossible. Comparative studies of numerous films done at different times are of value. The filling defect of a carcinoma tends to remain the same, while the narrowing and irregularity due to diverticulitis is less constant. The shadow caused by a carcinoma is more abrupt and shorter, and the edges suggest infiltration. Diverticulitis usually results in a longer defect with tapered edges and variable appearance. Carcinoma causes a disruption of the mucosal pattern, which is best seen on post-evacuation films. The occurrence of transrectal bleeding is helpful in differentiating between the two. Bleeding does not often occur with diverticulosis and diverticulitis. When bleeding occurs with diverticular changes, it is usually sudden and profuse. A carcinoma of the left colon usually causes the passage of small amounts of gross blood which are persistently present. The passage of bloody mucus is associated with a carcinoma rather than diverticulitis.

At times the differentiation between carcinoma and diverticulitis cannot be determined before surgical operation. Carcinoma causes an intraluminal defect which can be felt as a proliferative edge when the bowel wall is invaginated. Diverticulitis is an extraluminal process that does not result in a hard, raised edge.

The irritable colon with symptoms of bowel irregularity is occasionally confused with carcinoma. On x-ray examination spasm may simulate a filling defect, but the defect is inconstant. An irritable bowel is the result of autonomic nervous system dysfunction in a susceptible person as a response to stress and tension. A positive approach to the problem reveals other signs and symptoms of anxiety and a pattern of distress at times of tension. An irritable bowel does not cause rectal bleeding.

*Rectum.* This is the commonest site for all large bowel carcinomas and they are often overlooked because there are many other causes of rectal symptoms. Most adults have hemorrhoids, many have hemorrhoidal difficulty, some of them also have carcinoma. Hemorrhoids will cause bright red rectal bleeding with blood noted on toilet tissue and in the water of the toilet bowl, and so will a rectal carcinoma. Not infrequently a patient can have bleeding from both a carcinoma and hemorrhoids. *No patient should have an anorectal operation until a carcinoma is ruled out.* Rectal tenesmus and a feeling of incomplete evacuation may be caused by a fecal impaction, ulcerative colitis, radiation reaction and various forms of pelvic disease. Digital rectal examination and sigmoidoscopic examination are necessary in establishing the diagnosis.

## TREATMENT

There is only one curative treatment for carcinoma of the colon and rectum, and that is radical surgical excision of the involved segment of bowel together with wide removal of the corresponding area of lymphatic drainage. Good surgical judgment is paramount in the proper choice of the best method of surgical treatment to be used in each case. Every surgeon who accepts the responsibility of this kind of operation should be familiar with a number of surgical procedures. He must have knowledge of the different variants of polypoid disease as well as carcinoma. There are proper places for single stage and multiple stage operations, for primary anastomosis by an open or closed method, exteriorization, abdominoperineal surgical procedures, low anterior pelvic anastomosis, extrarectal anastomosis and "pull through" procedures.

At present, the goal of the surgeon should be less than 2 per cent mortality, 95 per cent operability, and a five-year cure in the majority of cases of all colon and rectal carcinomas. Proper preoperative preparation is important. Mechanical decompression of the colon, use of intestinal antimicrobial agents, correction of electrolyte, vitamin and protein deficiencies, transfusion and control of any coexisting disease should be carried out before definitive operation is performed.

At operation, attention should be directed to the possibility of multiple lesions; 5 per cent of the time there are multiple (primary) carcinomas. Care must be taken to lessen the chance of surgical implants. On occasion a lesion that is inoperable can be converted to an operable lesion by performing a proximal diverting colostomy. A large tumor that has invaded adjacent viscera, without known liver or lung metastasis, is sometimes cured by an extended resection.

Due consideration should be given to the psychological problems which are incurred by the patient with cancer. Optimism and assurance are justifiable on the basis of the relatively high possibilities of cure. Following recovery from successful surgical extirpation, repeated reassurance is frequently necessary for peace of mind and physical welfare of the patient. Minor subjective complaints or the development of symptoms of entirely unrelated illness may convince the patient that he is hopelessly riddled with cancer. This incorrect assumption is occasionally made by the physician. While such a possibility must necessarily be kept in mind by the physician, acceptance of the fact should never precede the establishment of proof that metastatic lesions are present.

The recurrence of symptoms of bowel irregularity or of bleeding is not necessarily evidence of recur-

rence of cancer. The incidence of development of a new primary lesion is sufficiently high to suggest this possibility. In such an event, the prognosis for cure by surgical excision of the new lesion is the same as it was for the first lesion.

## PREVENTION

Unfortunately there is much confusion regarding polyps and carcinoma of the large bowel. Some of this confusion is related to the terms used. The word "polyp" denotes an elevation; it does not indicate the microscopic pattern of the elevation. Elevations that are due to mucocoeles, mucosal hyperplasia, hypertrophied anal papillae, lymphoid hyperplasia, fatty deposits, hamartomas (juvenile polyps), inflammatory tissue (pseudopolyp), lipomas, lymphomas and so on, may present themselves as polyps but they are not adenomas. The word *adenoma* should be reserved for specific lesions with distinctive neoplastic but benign microscopic features.

Contrary to a few recent articles, there is much evidence that adenomas are associated with the presence and development of colon and rectal carcinomas. They have the same anatomical distribution and age incidence. Specimens from resections for large bowel carcinoma have, in addition, one or more adenomas in a third of the cases. Serial sections of carcinomas may show zones of adenomatous tissue, and the opposite is true. Lesions thought to be adenomas by experienced clinicians, yet not removed until later, have shown increased growth, change in appearance, and when finally removed were definite carcinomas. In most persons having familial polyposis a carcinoma develops by the time they are forty years of age unless the adenomas are removed. The finding of an adenoma on sigmoidoscopic examination sometimes leads to the finding of a carcinoma of the abdominal colon. Because of this, barium enema studies should be done whenever an adenoma is found on sigmoidoscopic examination. The true relationship between adenomas and adenocarcinomas must await basic knowledge as to their cause and histochemical patterns. For the present, adenomas are guilty at least by association with adenocarcinomas, and they should be treated unless the patient's general health suggests a limited life expectancy.

Authorities agree that papillary (villous) adenomas as part of their natural history become carcinomas. They characteristically occur in older people, and cause the passage of mucus. This outpouring of protein may cause hypoproteinemia and hypokalemia. On occasion an increased renal work load occurs that is reflected by albuminuria and non-renal azotemia. Papillary tumors usually have a large base, and multiple biopsy is necessary to



help evaluate them properly. Palpable induration in a papillary tumor usually indicates carcinoma. When carcinoma is present, a cancer resection should be done. Benign papillary (villous) adenomas should be excised, not fulgurated, lest they recur. With benign lesions the entire thickness of the bowel wall need not be excised. There are many ways to gain surgical exposure of low rectal papillary tumors: Complete sphincter relaxation under spinal or saddle block anesthesia, posterior sphincterotomy, posterior proctotomy.

Another dangerous lesion is the sessile adenoma. Large (over 0.5 cm) or ulcerated lesions visible on sigmoidoscopic examination should be biopsied. For non-ulcerated lesions less than 0.5 cm in diameter—so small that not enough untraumatized biopsy material could be obtained for precise microscopic evaluation—destruction by electrofulguration is permissible. A persistent shadow on x-ray examination suggesting a sessile lesion may be a carcinoma with or without benign adenomatous tissue. Much of the argument about polyps is academic, since only the pathologist can evaluate the growth and this necessitates biopsy or surgical excision.

A pedunculated adenoma suggests a slow rate of growth allowing for redundant mucosa as a response to peristaltic activity, to form a pedicle. The presence of a pedicle increases the chances for complete local removal, nothing more, as it does not change the nature of the adenoma nor is it part of the adenoma.

Pedunculated adenomas seen on sigmoidoscopic examination should be completely removed with a segment of the pedicle by means of a snare, providing the base of the pedicle can be controlled. This allows for complete microscopic study, and if there is no definite invasive carcinoma this constitutes adequate treatment.

A pedunculated tumor, noted by x-ray examination, does not always present a benign adenoma. Polypoid carcinoma does occur; and, again, only the pathologist can evaluate the histological pattern of the growth. We believe strongly in competent

frozen section study of questionable polyps at the time of laparotomy.

As the clinician must not abuse the word *polyp*, so the pathologist must not abuse the word *carcinoma*. Terms such as *carcinoma-in-situ*, *carcinoma stage I*, *occult carcinoma*, *atypism*, and *adenoma malignum* only confuse and compound the problem. The question is the presence or absence of carcinoma. If carcinoma is present, is local excision adequate treatment or is a resection indicated? The clinician and pathologist must work together, each telling what he sees and through proper communication regarding the gross and microscopic appearance of the lesion arrive at a proper decision, in the best interests of the individual patient. Certainly factors such as location of the lesion, age, family history, obesity, general health and emotional make-up of the patient will influence the decision. These same factors have to be considered regarding abdominal exploration for a polyp demonstrated by x-ray examination. Artifacts may cause a shadow suggestive of a polyp on x-ray examination. Frequently the x-ray study should be repeated to make sure a persistent filling defect is present before abdominal exploration is undertaken.

#### SUMMARY

Carcinoma of the colon and rectum is still the most common form of malignant neoplasm occurring within the body. Curability is directly proportional to early diagnosis. Diagnosis in most cases can be made by careful digital rectal and sigmoidoscopic examination. Meticulous x-ray studies are indicated if the diagnosis is not clear after direct examination. Polypoid lesions of the colon may be premalignant adenomas, frank carcinomas or a variety of other unusual lesions. Proper diagnosis and treatment of these lesions must be based on careful microscopic study and clinical evaluation.

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# CASE REPORTS

## Idiopathic Circulating Anti-Factor VIII Anticoagulant

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CIRCULATING ANTI-FACTOR VIII anticoagulants have been described in classical hemophilia, in postpartum patients, in association with a wide variety of disorders including rheumatoid arthritis, in disseminated lupus erythematosus, in drug reactions and in a few patients without evidence of other systemic disease.<sup>2,4,6-8</sup> The response to cortical steroids has been variable—most effective in patients with drug reactions and certain systemic disorders,<sup>5,8</sup> and in general ineffective in hemophilic patients and patients who have acquired this anticoagulant in the absence of other diseases.<sup>8-10</sup> In the following case an acquired circulating anticoagulant directed against factor VIII appeared in the absence of any of the associated conditions mentioned above, and disappeared coincident with the administration of methylprednisolone.

### REPORT OF A CASE

A 52-year-old white man was admitted to hospital November 5, 1961, for investigation of a bleeding tendency which had begun in April, 1961. He had received previous medical attention only for a tonsillectomy and a herniorrhaphy, both uneventful. Seven months before the present admission, hemarthrosis of the left ankle developed and was followed two weeks later by similar involvement of the left knee, ecchymotic areas over the buttocks and left groin and gross hematuria. He was admitted to a hospital April 16, where laboratory studies showed hemoglobin content at 13.6 gm per 100 ml of blood and the hematocrit at 40 per cent. Cystoscopy was carried out but the cause of the hematuria was not found. On May 2, 1961, hemoglobin was 6.7 gm per 100 ml and the hematocrit was 18 per cent. A transfusion—the first the patient ever had received—of seven units of blood was carried out. Transfusions had no apparent effect on the bleeding tendency and had a variable effect on the

Lee-White coagulation time which ranged from 35 to 65 minutes.

The patient was discharged after six weeks, symptomatically improved but with a prolonged coagulation time.

In June, 1961, a large hematoma of the neck developed spontaneously and another hematoma appeared in the deltoid muscle at the site of an intramuscular injection. The patient was readmitted to the hospital where seven direct blood transfusions were administered without improvement in the bleeding tendency. He continued to have prolonged bleeding from minor cuts and bruises and five weeks before his last admission, hemarthrosis of the right knee appeared spontaneously. He had not been exposed to any obvious toxins in the course of his work as a plumber and had not received penicillin, horse serum or sulfonamides before this illness. Two weeks before the onset of his illness, he had sprayed some roses with a liquid material containing malathion.

On physical examination, blood pressure was 118/70 mm of mercury, the pulse rate 72 and the respirations 16 per minute. Flexion contractures of both knees were present, associated with pronounced quadriceps atrophy. The right knee was warm and swollen. The left ankle was swollen and there was limitation of motion. Ecchymosis was present over the dorsum of the hands, arms, neck and buttocks.

The hematologic data were as follows: Hemoglobin, 13.3 gm per 100 ml; hematocrit, 41 per cent; leukocytes 10,600 per cu mm, with 62 per cent neutrophils, 34 per cent lymphocytes, 4 per cent eosinophils; reticulocyte count, 0.9 per cent; platelets 842,000 per cu mm. The urinalysis showed 2 plus albumin and no glycosuria. On microscopic examination of the sediment, 15 to 20 red blood cells and 8 to 12 white blood cells per high power field were noted. The urea nitrogen was 20 mg per 100 ml, the serum uric acid 4.4 mg and the total and direct serum bilirubin 0.5 mg. The total serum proteins were 6.6 gm and the serum albumin was 3.0 gm per 100 ml. Lupus erythematosus cell preparations on two occasions were negative. Coagulation

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TABLE 1.—Coagulation Studies

	Nov. 1961	Nov. 1962	Normal
Bleeding time (Ivy).....	1½ min.	4 min.	1 to 7 min.
Coagulation time (Lee-White).....	35, 45, 49 min.	7.8 min.	6 to 12 min.
Platelet count (indirect) per cu mm.....	457,800	291,500	170 to 550 × 10 <sup>3</sup>
Anti-hemophilic factor .....	5.2	88	50 to 150%
Thromboplastin screening test.....	Abnormal	Normal	.....
Cephalin celite clotting time.....	.....	57 sec.	66 sec.

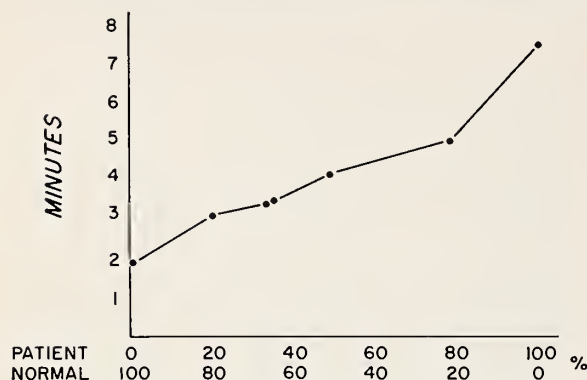


Chart 1.—Recalcified Clotting Time of Mixtures of Patient and Normal Plasma.

studies were as follows: bleeding time (Ivy), 1 minute, 30 seconds; coagulation time (Lee-White), 34 minutes; prothrombin time (Quick), 15.7 seconds (control, 12.3 seconds); prothrombin consumption, 12.4 per cent; clot retraction normal. Recalcification times with mixtures of the patient's plasma and normal plasma indicated the presence of a circulating anticoagulant (Chart 1). Intravenous administration of protamine had no effect on the prolonged coagulation time. A biopsy of tissue from the left gastrocnemius muscle showed no specific abnormalities.

On November 14, 1961, the patient was transferred to the University of California Hospital where further studies (Tables 1 and 2) confirmed the presence of an anticoagulant directed against factor VIII. An attempt to administer corticosteroids was thwarted by the development of a wound infection at the muscle biopsy site. Bleeding from this area stopped spontaneously after approximately six weeks and the patient was discharged to his home January 4, 1962.

He was examined there by the author on February 25, 1962. In the preceding week, recurrent hemarthrosis of the left knee and hemarthrosis of the right elbow had developed. He was bedridden, in continuous pain and greatly depressed. The biopsy site was well healed and no fresh ecchymotic areas were observed. Administration of methylprednisolone was begun on this date and no further evidence of bleeding was observed. The subsequent

TABLE 2.—Thromboplastin Generation Test (Biggs &amp; Douglas)

Platelet Material*	Absorbed Plasma*	Serum*	2 min.†	4 min.†	6 min.†
Cephalin ....	Patient	Patient	48.3	22.1	18.6
Cephalin ....	Patient	Normal	50.7	23.8	19.0
Cephalin ....	Normal	Patient	14.7	8.6	8.7
Cephalin ....	Normal	Normal	13.4	8.2	6.9

\*Incubation Mixture.

†Coagulation time in seconds after incubation of generating mixture.

course was one of gradual improvement over a period of several months until the patient was fully ambulatory. In July of 1962 he returned to work as a plumber and thereafter continued his normal activities, his only complaint being of mild discomfort in the lower extremities toward the end of the day. Minimal effusion of both knees was the only abnormality observed on physical examination. Methylprednisolone was discontinued on September 23, 1962 (Chart 2). Results of coagulation studies in November, 1962, were normal (Table 1).

## DISCUSSION

The resemblance of the condition in this patient to classical hemophilia was striking and the ineffectiveness of blood transfusions in controlling the bleeding tendency was similar to that noted in cases previously reported with anti-factor VIII anticoagulants. Corticosteroids were administered with little optimism in view of the discouraging reports in the literature. However, the response was dramatic, with immediate cessation of bleeding and thereafter no clinical or laboratory evidence of a bleeding tendency. It is of interest that after four days of intensive steroid therapy (methylprednisolone 48 mg per day), the Lee-White coagulation time was still 50 minutes, and that several weeks elapsed before the time was reduced to the normal range (Chart 2). A similar response has been reported in an elderly patient who recovered ultimately from this disorder associated with a penicillin reaction.<sup>4</sup>

The absence of the anticoagulant after the patient was well suggests that the disorder in this patient was self-limited; and the possibility that the dramatic clinical improvement that followed the administration of steroids was coincidental cannot be excluded.

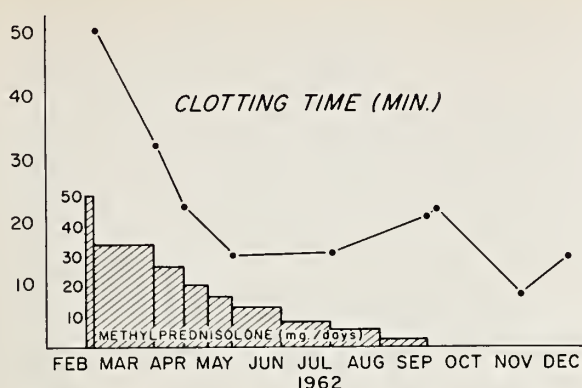


Chart 2.—Lee-White Clotting Time Related to Methylprednisolone Administration.

The mode of action of anti-factor VIII anticoagulants is uncertain. Evidence supporting both immunologic and enzymatic mechanisms has been advanced,<sup>1,3</sup> but neither hypothesis is without objection. In view of the wide range of associated disorders, it is possible that the mechanism is not the same in all instances. The fortunate outcome in the present case suggests that steroid therapy may be beneficial in some patients in modifying the clinical course until spontaneous remission occurs.

#### SUMMARY

A patient with an apparently "idiopathic" anti-factor VIII circulating anticoagulant is described. Complete recovery occurred coincident with the administration of methylprednisolone.

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## An Unusual Manifestation of Hypoglycemia

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PROFOUND ALTERATION in function of the central nervous system in association with hypoglycemia is well recognized. Hemiparesis or hemiplegia is one of the less frequently encountered complications of the hypoglycemic state.

A 40-year-old Negro man was seen in the Admitting Service at Wadsworth General Hospital on Thanksgiving Day, 1962, because of complete paralysis of the right arm and weakness of the right leg, of five hours' duration. While being transferred to the neurology ward, he became comatose and unresponsive.

Physical examination was carried out in the neurology ward. The patient was well developed, well nourished and muscular. He was unconscious, unable to carry out any commands or answer questions or mutter. The rectal temperature was 98° F, the pulse rate 72, the blood pressure 110/70 mm of mercury. The head and eyes were turned to the left. In the right eye the corneal reflex was absent. The right extremities remained inactive throughout the examination, were flaccid and did not move on painful stimulation. Facial grimaces were elicited on pinching of either Achilles tendon. Right lower facial paralysis was apparent. (In the Admitting Service it had been noted the tongue deviated to the right.) Abdominal reflexes were absent on the right. Reflexes were increased in the right upper and right lower extremities. Babinski and Gordon signs were positive on the right. No other abnormalities were noted.

Glucose content of a specimen of blood taken in the Admitting Service was reported, two hours later, as 40 mg per 100 ml, and that of a specimen drawn on admission to the ward was reported as 27 mg per 100 ml. A hemogram and results of urinalysis were within normal limits.

Because of hypotension, an intravenous infusion was started so that vasopressors could be given if needed. After receiving 150 ml of 5 per cent glucose in distilled water, the patient suddenly began to move his right leg. The infusion was quickened and within ten minutes the motor function in the

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right arm began to return, and soon afterward the facial paralysis lessened. Within 45 minutes after the infusion of glucose was begun, approximately 30 gm having been given, the patient appeared perfectly normal and all muscle paralysis had disappeared. His memory was excellent and he was able to give a complete, accurate history. He said that while in prison in 1952 he was diagnosed as having diabetes mellitus. A diet was prescribed and daily injections of insulin were given. The dosage was begun at 45 units and gradually was raised to 80 units of protamine zinc insulin daily in 1958. The acute onset of hypoglycemia was brought about when, due to an upper respiratory tract infection the patient had curtailed his food intake sharply for the previous three days but had continued taking the same amount of insulin. He had never had symptoms of acidosis and never before a hypoglycemic reaction. While he was in the hospital on a diabetic diet, his insulin requirement was 20 units NPH insulin daily. He remained in the hospital four days, then left without leave.

#### DISCUSSION

Since this patient was admitted to the ward with a diagnosis of cerebrovascular accident, it was fortunate that glucose was given parenterally. The several hours' delay that otherwise might have resulted before blood glucose values were determined could have permitted irreparable cerebral damage. Robinson and coworkers<sup>2</sup> carried out an electroencephalographic study of a patient with transient hemiplegia that occurred as a complication of insulin treatment in diabetes mellitus. They noted severe abnormalities which became much less pronounced when the blood glucose level returned to normal by hyperglycemic levels. Differing in this respect from anoxias of other causes, hypoglycemia may be first manifest by focal signs without obvious diffuse cerebral disturbance.<sup>2</sup>

#### SUMMARY

A 40-year-old man was admitted with a diagnosis of cerebrovascular accident. After glucose was given intravenously there was a dramatic disappearance of the right-sided hemiplegia. This case showed that focal signs may be the initial event in hypoglycemia.

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## Spontaneous Urethral Prolapse

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URETHRAL PROLAPSE is an unusual cause of symptoms referable to the genito-urinary tract. It consists of an eversion of the urethra through the meatus and may be thought of as a sliding herniation of the urethra upon its supporting structures.<sup>3</sup> Only females are affected. The first case was noted by Solingen, in 1732.<sup>8</sup> Zeigerman<sup>15</sup> reviewed the literature and reported five cases in 1945. Peters<sup>12</sup> recently reported eight additional cases. Data on incidence is widely various; one or two cases in several thousand gynecologic admissions is an approximation. A racial predilection for Negroes has been suggested.<sup>1</sup>

Prolapse of the urethra is seen most frequently in children, in post-menopausal women and in paraplegic women. The highest incidence is between ages 8 and 12 years, and the next highest between 60 and 65 years. The youngest reported patient was five days old, the oldest 92 years. In two-thirds of reported cases the patients are under 15 years of age.<sup>15</sup>

Some reports in the literature make distinction between complete and incomplete prolapse and there is disagreement as to definition. Complete prolapse, in the view of some observers,<sup>4</sup> is prolapse throughout the entire urethral length distal to the vesical junction. Others<sup>10,15,16</sup> refer to prolapse of the entire circumference as complete, and any less as incomplete. We suggest that *complete* be applied only to describe prolapse of the entire urethral length, and that any lesser prolapse be described as *partial*. The term *circular prolapse* would be suitable for that in which the whole circumference is affected, and *segmental prolapse* could be used for eversion of any segment of the whole circumference.

#### REPORT OF A CASE

A seven-year-old white girl entered St. Joseph's Hospital March 2, 1962, with chief complaint of moderate vaginal bleeding for the previous 24 hours. For a day before bleeding began the patient had a dry non-productive cough without fever.

Upon physical examination mild tracheo-bronchitis and an actively bleeding introital mass were noted. The extent and origin of the mass could not be determined. Next day the patient was examined while under anesthesia and the mass was observed to be 2 by 2 centimeters, dark red, edematous, necrotic and bleeding freely. The urethral meatus

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was in the center of the mass. No abnormalities were noted on rectal examination.

An indwelling catheter was placed and the urine that was released was clear. The mass was excised and 3-0 chromic interrupted suture was used to approximate the urethral mucosa to vestibular tissue.

The catheter was removed in 24 hours. At examination three months later the urethral meatus was well healed and there were no complications.

No single etiological factor nor one common to all cases of urethral prolapse has been implicated. Zeigerman<sup>16</sup> reviewed theories as to congenital anomaly and as to possible ways in which the lesion may develop later. Redundancy of the mucosa, weakness of the periurethral supporting tissue, neuromuscular dysfunction and stress are among the possible causative factors mentioned. None of the proposed theories is entirely satisfactory. The condition is probably etiologically analogous to hernia at other sites—attributable to congenital weakness of tissue.<sup>12</sup>

Prolapse of the urethra is usually of acute onset and follows such predisposing factors as cough, straining at defecation, and the Valsalva maneuver. Prolonged labor and any cause of vesical tenesmus, such as urethral or bladder neoplasms, may initiate the prolapse.

In general, symptoms and signs vary with the extent of the circulatory disturbance. This condition is usually accompanied by tumor, pain, bleeding and complaints referable to the urinary tract, although only a few mild symptoms may be noted. The commonest presenting symptom in young girls is bleeding or spotting from the vulvo-vaginal region.<sup>14</sup> The incidence of cystitis is increased. Polyuria, intermittent dysuria and pain proportional to the degree of prolapse are usual.

The degree of prolapse varies from a slight protrusion of the mucous membrane to a displacement of the entire urethral body. The protruding part is usually bulbous, the surface granular and dull to bright red, with focal ulceration. A serosanguinous or mucopurulent discharge may be present. The urethral orifice, although centrally located, may be obscured by edema. As the lesion progresses, the edema and congestion become more severe and thrombosis, necrosis and sloughing may occur.<sup>8</sup>

There are no pathognomonic microscopic features. Among the pathologic changes are vascular engorgement and acute and chronic inflammation of the mucosa and underlying tissues—changes that result from interference with the local blood supply and from secondary infection.

Conditions to be considered in differential diagnosis are urethral polyps, caruncle, condylomata,

ureterocele, carcinoma, suburethral and periurethral abscesses, urethral papilloma, urethral cysts and prolapse of the bladder.

Conservative treatment consists of hot sitzbaths followed by attempt to replace the urethra by manipulation. Moffett and Banks<sup>10</sup> recommended sitzbaths before beginning any form of surgical correction.

The most successful mode of treatment has been circular excision of the prolapsed mucosa with suturing of the cut edges as recommended by Moir,<sup>10</sup> Barnes<sup>2</sup> and Zeigerman.<sup>16</sup> Periodic urethral dilations are recommended post-operatively.

Doria<sup>5</sup> recommended ligation of the prolapsed mucosa over a catheter, letting necrosis and slough remove it. Abrams<sup>1</sup> reported a similar technique but he used electrofulguration of the mucosal edge for hemostasis.

Emmet<sup>6</sup> recommended reduction of the urethral mucosa through an incision in the anterior vaginal mucosa, excising the redundant tissue and closing the vaginal incision. Livermore<sup>9</sup> used high frequency fulguration at four quadrants to induce sub-mucosal fibrosis. TeLinde<sup>13</sup> completely destroyed the mucosa with high frequency cautery.

For dealing with extensive prolapse of the entire urethral body, Hepburn<sup>7</sup> advised suprapubic exposure, upward traction on the periurethral tissues to reduce the prolapse, then fixation to the pubic periosteum and fascia of the anterior abdominal wall.

The major complications following surgical correction are: urethral stenosis with stricture formation, urinary incontinence, recurrent prolapse, acute urinary retention and local infection with tissue necrosis.

#### SUMMARY

A case report of spontaneous urethral prolapse occurring in a young female is presented. The etiologic theories, predisposing factors, pathologic changes, modes of treatment and complications are reviewed.

510 Talbot Avenue, Santa Rosa, California 94505 (Dunn).

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## Myasthenia Gravis and Hyperthyroidism

### A Report of Two Cases

EDWARD E. WALLER, M.D., MOHAMAD RAZAVI, M.D.,  
and JOSEPH PICCHI, M.D., Oakland

THE SIMULTANEOUS OCCURRENCE of myasthenia gravis and thyrotoxicosis has been reported sporadically since Rennie described a patient with both diseases in 1908.<sup>7</sup> Recently, however, Engle<sup>1</sup> reviewed the literature and found reports of only 93 cases in which both diseases were present at the same time. Myasthenia gravis and hyperthyroidism are inordinately coincident (in 3 per cent to 8.82 per cent of cases, depending upon the series reported); but myasthenia gravis develops in less than 1 per cent of hyperthyroid patients.<sup>1</sup>

Although evidence is accumulating that hyperthyroidism increases the weakness of patients with myasthenia gravis,<sup>1</sup> the treatment of patients who have both diseases is still controversial. There are reports of a "see-saw" relationship between the diseases in which the myasthenia gravis gets worse as the hyperthyroidism is controlled; conversely there are reports of amelioration of the myasthenia with control of hyperthyroidism.<sup>4</sup> It is obvious from the contradictory reports in the literature\* that the relationships of the two diseases are obscure and variable. There seems to be a summation of weakness caused by each condition; and there appears to be an inconstant relationship between the control of hyperthyroidism and the severity of the myasthenia.

The following case reports illustrate the difficul-

ties encountered in the management of patients who have both myasthenia gravis and hyperthyroidism.

### REPORTS OF CASES

CASE 1. A 41-year-old Negro woman, Gravida I, Para I, was observed in the outpatient clinic in January, 1960, with complaint of double vision, difficulty in fully opening her eyes and dysphagia—all of three to four months' duration. These symptoms, the patient said, became worse with fatigue. Upon ophthalmologic examination the following findings were noted: bilateral ptosis of the lids and weakness of closure, normal corneal reflexes, normal pupillary reactions to light and accommodation, decided limitation of motion of all the extraocular muscles and some constriction of the visual fields. Edrophonium chloride was given, 2 mg intravenously, and diplopia abated and eye movement strengthened. The patient was admitted to Highland-Alameda County Hospital on January 20, 1960, for further study.

Questioning elicited that in December, 1959, approximately two months after the onset of diplopia, she became nervous and tremulous, noticed increased sweating, protuberance of the eyes and loss of weight.

The patient had had syphilis at the age of 18 and it had been treated with heavy metal injections. Hysterectomy and bilateral salpingoophorectomy were done at age 37 because of bilateral tubovarian abscess and leiomyoma of the myometrium. Post-castration hot flashes had been treated with cyclic administration of estrogen.

On physical examination it was noted that the skin was warm and moist. Both eyelids drooped, there was slight exophthalmos and the motion of all the extraocular muscles was decidedly limited. The thyroid gland was slightly enlarged, the right lobe feeling a little bigger than the left. Fine tremor of the fingers and brisk deep tendon reflexes were noted bilaterally. The pulse rate was 120.

Except for some weakness of the proximal muscles, the rest of the physical examination was unremarkable. The patient was thought to have myasthenia gravis and hyperthyroidism.

Packed cell volume, leukocyte count and cell differential, results of urinalysis and serologic examination, an electrocardiogram and x-ray films of the chest, skull and esophagus were all within normal limits. Protein-bound iodine was 9.8 mcgm per 100 ml and radioactive iodine uptake was within normal limits (14 per cent at 24 hours). Radioactive tri-iodothyronine uptake by red blood cells was 23 per cent (normal 12 to 17 per cent).

On January 30, 1960, neostigmine by mouth was started on a four-hour schedule with doses ranging between 15 and 30 mg. Occasionally an intramuscu-

\*From the Department of Medicine, Highland-Alameda County Hospital, Oakland 94606.

Submitted April 17, 1963.

\*Reference Nos. 2, 3, 5, 6, 8, 9, 10.

lar injection of 1 mg of neostigmine was required. On February 20, 1960, propylthiouracil, 400 mg every six hours, was started. On February 23 the dose of neostigmine was increased to 45 mg every six hours. Because of the discrepancy between the protein-bound iodine and the radioactive iodine uptake by the thyroid gland, propylthiouracil was discontinued February 28 and the following studies were done on March 2, 1960: radioactive iodine uptake at three, six, and nine hours after injection was determined and correlated with the amount of the administered dose excreted in the urine at the same hours. All determinations were considered to be within normal limits.

Because the patient was becoming increasingly weaker, neostigmine was increased to 60 mg every four hours on March 5 and to 90 mg every four hours on March 17. On March 19 administration of propylthiouracil was resumed at 400 mg every six hours. With weakness still increasing, the dosage of neostigmine was increased to 120 mg every four hours on March 22 and on April 2 it was increased to 180 mg every four hours (1,080 mg a day). On April 8, propylthiouracil was decreased to 100 mg every six hours and the schedule of neostigmine was rearranged to 90 mg every two hours during the day and 90 mg given at 1:00 a.m. and 4:00 a.m.

On April 19 the patient became acutely ill, with symptoms consistent with a cholinergic crisis. Meiosis, bradycardia and fever developed and she became apneic. Tracheostomy was provided and the patient was placed in a tank respirator and given antibiotics because of aspiration pneumonitis. Then all drugs except propylthiouracil and antibiotics were discontinued. After three days the patient was able to breathe without assistance. Neostigmine was resumed in a dosage of 60 mg every three hours, which maintained her status but she was unable to walk and was very tired by the end of the day. Electromyographic studies were "consistent with myopathy with no evidence of denervation."

Subtotal thyroidectomy was done in August, 1960, after two weeks of preparation with Lugol's solution. Pathological study of the surgical specimen revealed only a hyperplasia with foci of chronic inflammatory cells consistent with treated hyperthyroidism.

There was very little change in the status of the patient postoperatively. Neostigmine requirements fluctuated but she gradually became well enough to go home on a week-end pass. She was brought to the emergency room in another cholinergic crisis due to excessive intake of neostigmine while at home. Again she responded to treatment in a tank respirator and cessation of neostigmine. After recovery she had amnesia for recent events but no other neurological abnormality.

The patient then showed gradual improvement and when last observed, 11 months after operation, she was approximately in the same state as when first seen at the clinic, having mainly extraocular muscle involvement with occasional diplopia. She walked unassisted and fed herself, had a strong hand-grasp and could read with glasses. Diplopia developed whenever she tired. She was taking neostigmine, 90 mg every four hours. Occasionally she accidentally omitted a dose without noticeable increases in weakness.

CASE 2. The patient was a 17-year-old Negro girl who entered the hospital in April, 1960, with complaint of nervousness, hand tremor, forgetfulness, palpitations, increased sweating, loss of hair and a sense of pressure in the throat, all of about one year's duration. She also noticed that her eyes had become protuberant during the past year. Although her appetite was very good, she was unable to gain weight. Within a few weeks of the onset of the foregoing symptoms she became weak, had several falls and complained of double vision.

A school doctor and school nurse had noted thyromegaly in December, 1959, when she was treated for tonsillitis. Two weeks before admission she had passed a large, round worm (presumably *ascaris lumbricoides*). There was no other significant medical history before the present illness.

Physical Examination: The patient was thin and apprehensive. The pulse rate was 124 per minute, respirations 30 per minute and blood pressure 135/55 mm of mercury. Bilateral exophthalmus, bilateral lid lag, widening of the palpebral fissures and poor convergence of the eyes were noted. On the head the hair was scant and dry, but was normal in amount and quality in the pubic and axillary regions. The tongue was protuberant and grossly tremulous and the tonsils were enlarged. The skin was warm and moist. Slight enlargement of the thyroid gland was noted and it was tender to palpation. Bruits were heard over both lobes. The heart had a Grade I apical systolic murmur. Deep tendon reflexes were hyperactive bilaterally.

Laboratory Studies: Packed cell volume was 36 per cent. Leukocytes numbered 4,550 per cu mm—34 per cent segmented forms, 57 per cent lymphocytes and 9 per cent eosinophils. Results of urinalysis were within normal limits. No parasites or ova were found on stool examination. Protein-bound iodine was 18.2 mcgm, serum calcium 10.6 mg and serum phosphorus 3.4 mg per 100 ml. Sodium, potassium and blood urea nitrogen were within normal limits. An electrocardiogram showed a sinus tachycardia with increased QRS voltages in all leads. No abnormalities were seen in an x-ray film of the chest.



Starting April 15, 100 mg of propylthiouracil was given every six hours. Gradually the patient weakened until she was unable to sit up. Ptosis of the eyelids increased and external ocular movement was absent. The patient complained of dyspnea. On May 17, 1 mg of edrophonium chloride was given intravenously. Diplopia and ptosis disappeared almost immediately, muscle strength improved greatly and the patient sat up in bed without help. Administration of neostigmine was begun at 15 mg every six hours and was gradually increased to 30 mg every three hours. Propylthiouracil was increased to 200 mg every eight hours (600 mg a day), and Lugol's solution, 10 drops three times a day, was given; but the patient became progressively less responsive to neostigmine.

On May 31 subtotal thyroidectomy and exploration of the anterior mediastinum were carried out. The thyroid gland appeared hyperplastic as in Graves' disease. It weighed 75 gm. The thymus weighed 118 gm, had two lobes, each  $12 \times 6 \times 2$  cm.

Upon microscopic examination of the thyroid gland, hyperplasia and an appearance consistent with Graves' disease were noted. The thymus showed hypertrophy of both lymphoid tissue and Hassell's corpuscles, the latter showing cystic degeneration and calcification. Only a few germinal centers were found. There was no evidence of thymoma.

Postoperatively the patient received 1 mg of neostigmine intramuscularly every three hours. Copious salivation was partially controlled with atropine. Postoperative complications included pneumo-mediastinum, which was controlled by tube drainage and suction, and atelectasis of the right upper lobe, which reexpanded following bronchoscopy. Because of pronounced weakness it was necessary to place the patient in a tank respirator intermittently for one week. Her muscle strength showed slight, gradual improvement but it was still necessary to give large doses of neostigmine (30 mg every 3 hours). On August 18, the protein-bound iodine was 9.1 micrograms per 100 ml. By September 6 it had decreased to 8.5 micrograms. At last report the patient was still too weak for discharge from the hospital.

#### COMMENT

Both patients had similar results of thyroid function studies. Both had elevations of protein-bound iodine but in both the radioactive iodine uptake was within normal limits—which remains an unexplained anomaly. Triiodothyronine uptake of red blood cells was high in Case 1.

The patient in Case 1 was noted to be hyperthyroid after myasthenia gravis developed. In Case 2 diplopia and mild weakness developed soon after

the symptoms of hyperthyroidism appeared and the patient became much weaker while receiving propylthiouracil. The diagnosis of myasthenia gravis was established after the administration of edrophonium chloride. Both patients still had myasthenia gravis two years after surgical treatment for hyperthyroidism. At last report the patient in Case 1 was no worse than she was at the beginning of her illness in spite of a very stormy postoperative course with episodes of cholinergic crises and respiratory complications. It is doubtful that treatment with propylthiouracil made her worse, for weakness was progressive during 20 days when no propylthiouracil was given. Although myasthenia gravis was not abated, she was relieved of hyperthyroidism.

In Case 2, since the myasthenia gravis became worse while the hyperthyroidism was being treated, it may be that there was a "see-saw" relationship between the two diseases. This was not tested by stopping treatment before operation and the patient still has severe myasthenia but not hyperthyroidism. It is interesting that although the patient was of an order usually benefited by thymectomy (young females with myasthenia and hyperplastic thymus), removal of the thymus along with subtotal thyroidectomy did not lessen the myasthenia.

It appears that every case of myasthenia gravis with thyrotoxicosis must be considered in its peculiar circumstances. Therapy directed at both diseases simultaneously is a logical approach, but the results are unpredictable. In the present state of knowledge, trials of a reversible form of anti-thyroid treatment are advisable, with careful assessment of the therapeutic response. One must be careful not to confuse a cholinergic crisis with worsening of myasthenia gravis. If a definite "see-saw" effect is elicited, then before undertaking permanent treatment of the hyperthyroidism one must decide which is worse, uncontrolled hyperthyroidism or myasthenia gravis.

#### SUMMARY

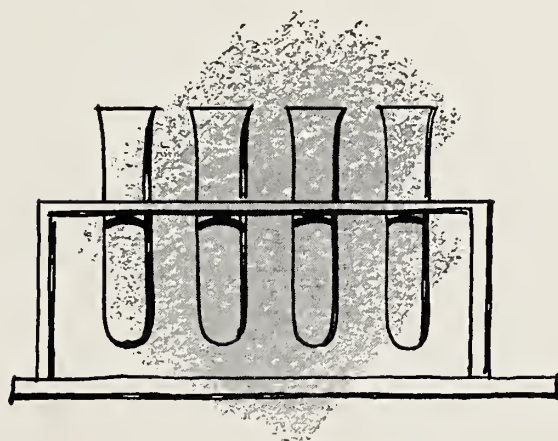
Two cases of myasthenia gravis with hyperthyroidism are presented. In one, hyperthyroidism developed after the onset of myasthenia gravis and showed no improvement after treatment of hyperthyroidism. In the other, hyperthyroidism and myasthenia gravis developed at about the same time, and the myasthenia gravis became worse while the patient was being treated for hyperthyroidism. Thyroidectomy and thymectomy did not lessen the myasthenia but the patient's condition was no worse after the operation than immediately before. In both cases radioactive iodine uptake was within normal limits although results of other studies indi-

cated hyperthyroidism. This discrepancy was unexplained.

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# Scientific REPORTS FROM THE Board

## STRESS AND HEART DISEASE\*

BETWEEN 1953 and 1962 the Committee on the Effect of Strain and Trauma on the Heart and Great Vessels of the American Heart Association investigated this subject. The detailed results were published in the journal *Circulation*, volume XXVI, October 1962.

Litigation in this field is beset by diverse medical opinions which may lead to legal decisions not in accord with acceptable scientific knowledge. The values of authoritative studies such as the one mentioned are relatively lost if physicians in general are not informed of the results. Communication of some of the conclusions drawn from the study may stimulate physicians to study the details of the original report.

Approximately 50 per cent of men over age 45 have a significant degree of coronary atherosclerosis. In many of them the condition is asymptomatic at normal activity, but in some of them symptoms of angina pectoris may develop under conditions of unusual stress or strain. "Coronary insufficiency" leading to patchy or only microscopic infarction of heart muscle may result from the natural progression of the coronary disease even with the subject at rest, or it may come about under certain stresses. During an attack of either type, death may occur suddenly, presumably from disturbance of rhythm. Seldom is sudden death from coronary artery disease associated with fresh coronary thrombosis. No single clear explanation to establish that physical

effort will cause precipitation of coronary occlusion is acceptable to all pathologists. Except for situations causing acute lowering of systemic blood pressure (shock, hemorrhage, tachycardia or abnormal heart rhythm), acute myocardial infarction is felt to be an unexplained occurrence without proven relationship to any precipitating cause. The Committee could find no clinical or pathological method to determine a causative relationship between a typical coronary thrombosis with infarct and any given event. At the same time, it recognized that coronary insufficiency may result from factors of stress or strain; and if clinical or electrocardiographic evidence became apparent while such factors were at work, that would be presumptive of causal relationship.

In the absence of acceptable scientific proof (with the rare exception of heart strain secondary to occupational pulmonary disease), the Committee recommended that heart disease be not considered as arising out of employment. It did conclude, however, that heart failure (whether of congestive type, of coronary insufficiency type or of myocardial infarction type) should be considered related to physical or emotional exertion if onset occurred while the individual was undergoing clearly unusual stress. No criteria were found acceptable to the Committee to establish a relationship of effort or emotion to intimal hemorrhage. It was recognized that in other types of heart disease (not coronary disease) strain or trauma could precipitate other serious disorders in the circulation.

Among many recommendations submitted by the Committee was the encouragement of further studies in an attempt to define what part emotional or physical stress may play etiologically in coronary artery disease and in bringing about its overt manifestations.

\*A statement from the Committee on Scientific Information of the Scientific Board, California Medical Association.

# California MEDICINE

For information on preparation of manuscript, see advertising page 2

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## EDITORIAL

### A C.M.A. Keogh Plan for Retirement Income

APPROVAL HAS NOW been given by the Council of the California Medical Association for its special committee to proceed with the development and offering of a retirement program based on the Keogh Law adopted earlier this year by the Congress.

Under this authorization the committee will develop a brochure to go to all C.M.A. members, outlining the details of the plan and inviting participation by all who are interested. These mailings will be made in ample time for members to take full advantage of the tax benefits provided for the full 1963 calendar year.

For review, the Keogh Law provides that self-employed persons may set aside up to 10 per cent of their net income, to a maximum of \$2,500 a year, for retirement purposes and may deduct from their earned income, for tax purposes, one half of the amount set aside. At the same time, the person electing to take this tax deduction is required to make for his employees of three years or more a comparable retirement program, the cost of which is fully deductible by the taxpayer as a business expense. The percentage of earned income placed in the plan must be the same for employer and employee.

This type of tax deduction was worked on for more than ten years by Congressman Keogh before it was finally approved by the Congress. In effect, it gives to the self-employed person a measure of the same tax protection that is enjoyed by others who are employed by industry or business and who are provided with an employer's retirement program for which the employer may deduct his cost as a business expense.

Regulations setting forth the manner in which group or individual retirement programs under this law, have now been issued by the Internal Revenue Service. It is under these regulations that the C.M.A. plan has been drawn up. The late date of the issu-

ance of official regulations has delayed the announcement of the C.M.A. Keogh plan until this late in the year.

Meanwhile, members have been urged to set aside their own funds without waiting for the regulations, so that they could be given tax benefits for the whole year and so that entry into a group fund would not require funds not readily available.

The C.M.A. committee of experts was carefully chosen from staff members of the Association and of its constituent societies and from independent authorities familiar with the needs and objectives of a broad retirement program. Members of the committee of experts included three attorneys, an insurance executive, an investment executive and an actuary.

When this group presented its report to the C.M.A. Council, the reaction was immediate. The plan as outlined was accepted and the committee was urged to proceed at once with its implementation.

The plan to be offered to C.M.A. members combines insurance annuities and investments. No life insurance is included; life insurance premiums are not tax-deductible under the law. Annuities, however, will be used as a source of income to the member after retirement.

In the field of investments, the committee unanimously approved the purchase of equities. For this purpose it selected two out of more than 300 available investment trusts. Selection was made on the basis of any investment trust meeting three criteria which were developed in advance. These included good management at a minimum charge, a policy of full investment of available funds and the direction of qualified investment counsel. The immediate records of production of income or market growth were not considered to be real guides, since nearly all investment trusts suffered setbacks in the 1961 market decline that make their records for 1962, for instance, look somewhat dismal.

The two funds selected by the committee will allow the participant to make a choice of which he



desires. He will also be given his own choice of the percentage of his deposits he wants invested in equities and the percentage in annuities.

Safeguards will be written into the plan for the protection of employees who are covered and who, for reasons of death of employer or other causes, must change their employment after years of good and faithful service.

A California bank will be selected to act as trustee for the plan and bids have already been asked, on a competitive basis, from most of the larger banks in the state.

Costs to the participating members have been kept in mind throughout and those who choose to establish a Keogh-type retirement program, with its tax shelters, may be assured of the use of the maximum amount of their deposits for their own benefit when they are ready to start withdrawals.

Along with the green light on this program has come the announcement of a similar plan under auspices of the American Medical Association. The A.M.A. authorized development of a Keogh program at its meeting earlier this year and the plan has already been assembled and made available to all A.M.A. members.

It should be pointed out, in this connection, that it is not the intent of either the C.M.A. or the A.M.A. programs to compete with other plans or with individually-established programs. Rather, both the state and the national plans have been developed to provide a recognized and authorized program for the benefit of those members who elected to participate. It is quite likely that other medical organizations may produce similar programs, even as they have done in the field of disability insurance. The C.M.A. program gives every member the opportunity of entering into a well conceived, well thought-out program in the event he does not have other facilities available or if he prefers the terms of this plan to others which are available to him. This is not a field designed for competition for sales. The maximum deposits are limited by law, any program must warrant Internal Revenue Service approval, and the accumulation of funds in a program works against switching from one plan to another. The C.M.A. plan will be presented to the Internal Revenue Service for approval.

It is likely that as time goes on the Keogh Law will be expanded so that a physician may enlarge his own retirement program. The author of the law has already announced his intention to seek a broader approach to the problems of building a retirement fund by the self-employed individual.

When and if such broadening occurs, the C.M.A. program will be in position to meet such amendments as may be made.

Meanwhile, it is anticipated that official offerings of the C.M.A. plan will be sent to all members, in a matter of a few weeks. This is important material and will warrant a thorough study by all members who are interested in building a retirement program with a tax-sheltered base. The special committee is to be commended for developing this program and the Council for approving and encouraging it.

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## The Editorial Board

ALTHOUGH RARELY CELEBRATED and probably not often thought of by readers, the editorial board of a medical journal is a large factor in determining the worth of the publication. Physicians are hard come by who have the peculiar combination of talent, knowledge, judgment and willingness necessary to do well the work they are called upon to do as members of an editorial board for a journal like CALIFORNIA MEDICINE. But come by them we did in the past; and come by them we have now again, under direction of a rule in the Bylaws limiting the term of members of our Board.

To meet this requirement a plan was drawn up for gradual replacement of members of the Editorial Board of CALIFORNIA MEDICINE who have served for long terms. Deciding which of those in this group would leave and who would stay for a while longer was done by lottery.

We must acknowledge an emotional wrench, as at the separation of old friends, when the lots were drawn. Yet it is heartening that the search for replacements turned up many physicians who obviously are well qualified to take over. The search was aided by the officers of Scientific Sections, by the Committee on California Medicine of the Scientific Board and by many others—not least by the members of the Board who were being supplanted. From the many good prospects, a list of nominees was drawn and their appointment was approved by the Council.

We speak both editorially and, we are sure, for all the members of the California Medical Association when we welcome the new members of the Board to a worthwhile yeomanry, renew our thanks to the members who are remaining on the Board, and address special gratitude to those who served long and well and now are relieved of duty.

# California MEDICAL ASSOCIATION

## NOTICES & REPORTS

### Council Meeting Minutes

*Tentative Draft: Minutes of the 495th Meeting of the Council, San Francisco, Hilton Inn, October 5, 1963.*

The meeting was called to order by Chairman Anderson in the Hilton Inn, San Francisco International Airport, on Saturday, October 5, 1963, at 10:00 a.m.

#### Roll Call:

Present were President Sherman, President-Elect Doyle, Vice-Speaker Heron, Editor Wilbur, Secretary Hosmer and Councilors MacLaggan, Wilson, Gooel, Bullock, O'Connor, Ham, Rogers, Dalton, Davis, Murray, Miller, Watts, Campbell, Hudson, Kaiser, Anderson, Dozier, Shaw, Grunigen and Cosentino. Absent for cause, Speaker Quinn, Councilors Todd and O'Neill.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Klutch, Clark and Bowman, Doctors Batchelder and Miller and Mrs. Griffith of staff; Messrs. Hassard and Huber of legal counsel; Messrs. Read, Salisbury and Putnam of the Public Health League; county executives Scheuber of Alameda-Contra Costa, Rideout of Butte-Glenn, Rosenthal of Forty First, Geisert of Kern, Lingerfelt of Fresno, Baker and Field of Los Angeles, Bannister of Orange, Brayer of Riverside, Dochterman of Sacramento, Donmyer of San Bernardino, Neick of San Francisco, Thompson and Monnick of San Joaquin, Wood of San Mateo, Donovan of Santa Clara and Brown of Sonoma; Doctor Malcolm Merrill, State Director of Public Health; Doctor Daniel Lieberman, State Director of Mental Hygiene; Doctor Lester McDonald and Mrs. Eunice Evans of the State Department of Social Welfare; Messrs. MacDougall, Linville and Dowell of the California Hospital Association; Doctors T. Eric Reynolds and Paul I. Hoagland and Mr. Etchel Paolini of California Physicians' Service; Mr. Robert E. Garrick, consultant; Doctors Dan O.

Kilroy, Francis E. West, Donald Abbott, William Wickett, John B. DeC. M. Saunders and others.

#### 1. Minutes for Approval:

On motion duly made and seconded, and with corrections noted, minutes of the 494th Council meeting, held August 24, 1963, were voted approval.

#### 2. Membership:

(a) A report of membership as of October 2, 1963, was presented and ordered filed.

(b) On motion duly made and seconded, 30 delinquent members, dues now paid, were voted reinstatement.

(c) On motion duly made and seconded in each instance, 11 applicants were voted Associate Membership. These were: Richard S. Hansen, Alameda-Contra Costa; William H. Ziering, Fresno County; Juan Espinel, Marshall Jay Grobert, Frederick Kellogg, James Herbert McClure, Anselmo Pineda, Stuart Simon Turkel, Los Angeles County; Leon Epstein, John W. Parker, San Francisco County; Ralph Thumma, San Luis Obispo County.

(d) On motion duly made and seconded in each instance, eight members were voted Retired Membership. These were: Alice B. Burke, Alameda-Contra Costa; Robert A. Jones, Peter Mamula, Edward T. Spunt, Los Angeles County; Eleanor Chambers,

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SAMUEL R. SHERMAN, M.D. . . . . President  
JAMES C. DOYLE, M.D. . . . . President-Elect  
WILLIAM F. QUINN, M.D. . . . . Speaker  
IVAN C. HERON, M.D. . . . . Vice-Speaker  
CARL E. ANDERSON, M.D. . . . Chairman of the Council  
BURT L. DAVIS, M.D. . . . Vice-Chairman of the Council  
MATTHEW N. HOSMER, M.D. . . . Secretary  
DWIGHT L. WILBUR, M.D. . . . Editor  
HOWARD HASSARD . . . . Executive Director  
JOHN HUNTON . . . . Executive Secretary  
General Office, 693 Sutter Street, San Francisco 94102 • PRaspect 6-9400  
ED CLANCY . . . . Southern California Office  
1515 N. Vermont Avenue, Los Angeles 90027 • 663-8071



Martin Debenham, Charles E. French, San Francisco, Robert McCulley Halbach, San Joaquin.

(e) On motion duly made and seconded, reductions of dues were voted for 17 members for reasons of illness or postgraduate study.

### 3. *Report of President-Elect:*

Doctor Doyle reported on several visits he had recently made at the request of component societies and commented on the cordial reception he has received.

### 4. *Committee on Committees:*

Doctor Doyle, chairman, reported for the Committee on Committees on the following nominations:

Elmer Gooel as C.M.A. representative on a committee to review student health programs in state colleges.

Five members of the Scientific Board for membership on a certification committee for specialists who are members of the Forty First Medical Society. These are George Griffith (Donald Petit, alternate) for medicine; J. G. Moore, obstetrics-gynecology; Donald King, orthopedics; David A. Wood, pathology, and, as chairman, William P. Longmire, Jr., surgery.

District 3, Committee on Maternal and Child Care, John C. Bodle, Sonoma County. District 4, Nicholas W. Demas, San Joaquin County. (Charles M. Blumensfeld, Sacramento, alternate).

On motion duly made and seconded in each instance, these appointments were voted.

### 5. *Bureau of Research and Planning:*

Councilor Ham, reporting for the Bureau of Research & Planning, presented a compilation of factual material on hospital and medical care for the aged prepared by the Bureau, and requested Council determination that the Bureau on Communications meet the cost of reproducing 500 copies and distributing 1,000 or more copies to the high schools of California as source material for debaters who will use this subject in the current debate topic. On motion duly made and seconded, the Bureau on Communications was ordered to meet the cost of 500 copies of this compilation and to distribute 1,000 or more copies, costs to be met from the communications budget and the bureau memorialized to request additional funds later in the fiscal year if appropriated funds prove insufficient.

Doctor Ham also presented a proposed study for BURP on the frequency and reasons for physicians assessing greater or lesser fees for their services than their customary fees. On motion duly made and seconded, it was voted to ask the bureau to refrain from any activity on this question.

### 6. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, reported that the State Board of Health had approved a report finding no diagnostic or therapeutic value in five cancer agents and had also approved the use of trivalent poliomyelitis vaccine as meeting the law concerning poliomyelitis vaccination of school children.

Doctor Merrill also reported that consideration was being given to the establishment of regional hospital planning committees in the San Joaquin Valley and in San Diego, in addition to committees already operating in the Los Angeles and San Francisco areas. He also stated that determination is to be made within the week of the distribution of approximately \$11,000,000 of federal funds for hospital and associated construction. New regulations may be forthcoming, Doctor Merrill reported, on automobile exhaust systems under recent findings that hydrocarbon emissions from auto exhausts are at much lower level than previously estimated.

### 7. *State Department of Mental Hygiene:*

Doctor Dan Lieberman, State Director of Mental Hygiene, who several days earlier had submitted his resignation from this post, bade the Council farewell and expressed his appreciation of the support of the Council in the mental health program espoused by him and by his predecessor. He reported encouraging results from the program of decentralization of returning care of the mentally ill to their own communities and their own physicians and expressed hope that this program might continue so that the next ten years there would be no need to construct additional large state mental hospitals. He also thanked the Association for its willingness to undertake team surveys of present state hospitals.

### 8. *State Department of Social Welfare:*

Mrs. Eunice Evans reported on problems presented by the recognition of chiropractors being permitted to handle Aid to Needy Children cases, recognition flowing from rulings by the State Attorney General. Regulations are needed to confine this practice to the scope of the licenses issued to this group, she reported.

### 9. *California Physicians' Service:*

Doctor Paul I. Hoagland, Board of Trustees chairman of C.P.S., reported that the financial position of C.P.S. and its subsidiary, California Physicians Insurance Corp., were excellent and that C.P.S. is experimenting with the offering of convalescent home care following hospitalization. Two days of convalescent home care would be provided for each day a member has been hospitalized, in an effort

to reduce institutional care costs by earlier discharges.

Doctor Hoagland also complimented the C.M.A. on its presentation of a slide presentation urging the retention of C.P.S. as a fiscal agent under county welfare programs.

#### 10. *Medical Executives Conference:*

Joseph Donovan, chairman of the Medical Executives Conference, reported that the conference had voted to request the Council to defer action on a pending blood bank committee report until members of the conference interested in blood banks had had a chance to study its proposals.

The conference had also voted, he stated, to urge that distribution of materials for high school debate teams be expedited.

#### 11. *California Hospital Association:*

Mr. Frank L. MacDougall, president of the California Hospital Association, thanked the Council, in advance of the termination of his office, for its assistance during the past year and introduced Mr. Clifton H. Linville, administrator of the Fresno Community Hospital, his successor. He also reported that in his opinion there may be some consolidations of marginal hospitals under corporate sponsorship. The Council welcomed Mr. Linville and extended its offer of cooperation.

#### 12. *Report of the President:*

President Sherman reported that he had received a warm welcome in all component societies he had visited. He also presented a letter received from the president of the American Medical Assistants' Association and urged that all physicians encourage their staff members to participate in this organization. On motion duly made and seconded, it was voted that the Bureau on Communications should plan to meet with the medical advisory committee to the California division of A.M.A.A., to seek means of stimulating membership by office assistants.

#### 13. *Resolutions of 1963 House of Delegates:*

The chairman presented a review of actions taken on all resolutions from the 1963 House of Delegates and asked assistance in locating the authors of all resolutions so that they may be notified of these actions.

#### 14. *Committee on Legislation:*

Doctor Dan O. Kilroy, committee chairman, reported that a proposal had been made to segregate into one division the state boards now licensing the healing arts practitioners from other boards handling licensing of other groups under the State

Department of Professional & Vocational Standards. On motion duly made and seconded, it was voted that no position on this proposal be taken at this time.

Mr. Ben Read commented on a number of legislative proposals which had been referred to interim committees of the Legislature and stated that no schedule of committee hearings had yet been released.

On motion duly made and seconded, the Council voted unanimously to commend Doctor Kilroy and Messrs. Read, Salisbury and Putnam for their dedication during the recent legislative session.

#### 15. *Foreign Medical Service:*

Doctor William Wickett, chairman of an ad hoc committee established to review the need of facilities to help guide physicians entering missionary or other foreign service, presented a report which urged that a permanent committee be established to provide assistance to physicians planning such service in such matters as immunizations, climate, national customs, etc. On motion duly made and seconded, it was voted to refer this matter to the Committee on Committees for review and implementation.

#### 16. *Commission on Public Agencies:*

Doctor MacLaggan presented a commission report on the availability of federal funds for immunization programs for children up to age 5. On motion duly made and seconded, it was voted to accept this report.

Doctor MacLaggan also reported on a proposed program for recognition of nurse obstetrical assistants. On motion duly made and seconded, it was voted to table this matter pending further distribution and consideration of the proposals made.

On Resolution #41 of the 1963 House of Delegates, it was moved, seconded and voted to refer the commission report to the Scientific Board for study and consultation with the Committee on Legislation.

Resolution #38-63 was, on motion duly made and seconded, voted to be referred to the Bureau on Communications and the Committee on School Health.

Resolution #95-63 on air pollution was suggested by the commission to be referred to a specially named statewide committee. On motion duly made and seconded, it was voted to refer this matter to the Committee on Committees, with instructions to confer with the Scientific Board on possible membership on such a committee.

Doctor MacLaggan also called attention to the fact that various medical supplies, including disposable syringes, medications, etc. are sometimes placed in trash containers or other areas where they



may be available to children and other persons. In some areas it has been suggested that local ordinances be enacted prohibiting this type of disposal. On motion duly made and seconded, it was voted to instruct the Bureau on Communications to inform physicians of the availability of educational material to encourage approved methods of disposal for such supplies.

#### 17. *Committee on Blood Banks:*

Doctor Robert Purvis, chairman of the Committee on Blood Banks, reported on the current effort to reconstitute the California Blood Bank System and pointed out that 42 per cent of blood supplied in California today comes from C.M.A.-sponsored banks, another 42 per cent from Red Cross centers and the balance from hospital and privately operated banks. He presented the committee's proposed qualifications for membership in a revised statewide system and asked that the Council approve such a revised organization and continue to issue annual certificates to member banks. On motion duly made and seconded, this proposal was referred to the Commission on Community Health Services for study and later report to the Council.

#### 18. *Bureau on Communications:*

Mr. Hunton reported on several items currently being carried on by the bureau, including participation in the visits of Doctor Ed Annis, A.M.A. president, showing of slide presentations to encourage medically-oriented fiscal handling of county welfare programs and recent approval of a series of medical items for distribution to newspapers, radio and television stations.

#### 19. *Commission on Professional Welfare:*

Mr. Hassard reported for the Commission that a draft of a program for physicians to participate in retirement plans under terms of the Keogh Law has been completed. To proceed with implementation of the program, the program as drafted would call for the employment of a bank as trustee and would provide for issuance of annuity insurance contracts and purchase of equity investments. On motion duly made and seconded, it was voted to approve the program as drafted and to authorize its implementation.

#### 20. *Scientific Board:*

Doctor Edward B. Shaw, chairman of the Scientific Board, reported that the executive committee of the board would meet next week and would make a later report to the Council. He also reported that the scientific programs for the 1964 Annual Session were almost complete in preparation. Doctor Campbell suggested that the Scientific Board consider an

overall study of the practice of medicine as a means of inhibiting the splintering of the profession.

#### 21. *California Medicine:*

The Council approved a list of nominations to the Editorial Board made by the Committee on CALIFORNIA MEDICINE in consultation with the Editor and the Chairmen of the Scientific Sections.

#### 22. *Staff Report:*

Mr. Hassard reported that Doctor Walter E. Batchelder, a staff executive for the past nine years, had resigned to take a position in the San Mateo County Health Department and that a portion of his duties would be taken over by Doctor Eugene Miller, who is currently employed by both the C.M.A. and the American Cancer Society, California Division.

Mr. Hassard also asked assistance in locating the authors of resolutions adopted by the 1963 House of Delegates and now ready for report. He pointed out that many resolutions are by society delegations and that authors are supposed to receive this progress report.

On motion duly made and seconded, the Council unanimously voted its commendation to Doctor Batchelder and expressed best wishes for his continued health and happiness.

#### 23. *Legal Department:*

Mr. Hassard reported briefly on the status of two lawsuits in which the Association is engaged.

#### 24. *AMPAC:*

In the absence of Doctor Todd, chairman of the California Volunteers for AMPAC, Doctor Cosentino reported that plans are being made for a breakfast meeting of county chairmen at the Officers' Conference in February and that a rally is planned at the time of the 1964 Annual Session.

#### 25. *Information for Member:*

A request for information from Doctor Franzblau of San Rafael was presented to the Council and the chairman was directed to reply.

#### 26. *Time and Place of Next Meeting:*

As previously agreed, the next Council meeting will be held in Los Angeles on November 16 and 17. On motion duly made and seconded, it was voted to start the first day's meeting at 9:30 a.m., with staff members of the C.M.A. and its component societies permitted to attend.

#### *Adjournment:*

There being no further business to come before it, the meeting was adjourned at 5:15 p.m.

CARL E. ANDERSON, M.D., *Chairman*  
MATTHEW N. HOSMER, M.D., *Secretary*

## CHANGE IN WORK INJURY REPORT

A change in the Labor Code, Section 6407, effective September 20, 1963, requires that on the doctor's First Report of Work Injury in workman's compensation cases, the patient's social security number be included. Until new forms are available, it is recommended that this number be put on line 4, following the patient's name.

## Back to Light Work

UNLESS YOUR industrial injury patient is the boss or a relation of the boss at his place of employment, there is usually no such thing in industry as a return to light work status. A large plant can be an exception, and it might well find an easier job for the patient with a back problem, or severe injury or a long leg cast. Industry is interested in keeping injured employees on the job, if that is not detrimental to recovery. This is not always possible when the employer has only two or three people in his shop. Some companies are able to meet restrictions in an effort to keep the employee on the job. Close communications are necessary to clear the way between the physician and management.

In some instances the patient's regular work is not strenuous, and sending him back with a release for "light work" might mean to the employer "lighter than before." The employer then, through this misunderstanding, might be reluctant to accept the employee for his former job, although in truth he could resume his normal work.

If a physician wants to understand the workingman, he should have some idea of his working conditions and problems. Visiting the plants in his area might be very educational, interesting, profitable and to the benefit of all concerned. After absence of weeks, months or even years, the injured patient is frequently not ready for employment, either psychologically or physically. The industrial physician encounters this when the patient tries and fails simply because he is not ready. A release to light work is not an answer; the answer is to get him ready before returning him to work. It is important to prepare the patient and the employer beforehand and to determine whether light work is available should it be needed.

Where modified but not regular work is indicated, the physician should not only specify limits as to what the injured person can do, but should give specific instructions as to restrictions of activity. The employer can then evaluate available situations in which the patient's ability might be safely utilized. Sometimes it is even more helpful, both to employer and patient, for the physician to say what the patient *can* do as well as what he cannot or should not do. The workingman who is given only "don'ts" is liable to hold back in all respects and he may end up doing nothing. It is important to discuss special job placement both with the employee and his employer and to let each of them know that the subject has been discussed with the other. The telephone is a very useful instrument for these discussions.

COMMITTEE ON OCCUPATIONAL HEALTH  
CALIFORNIA MEDICAL ASSOCIATION



## In Memoriam

ABBOTT, CLARK LORENZO, Richmond. Died September 11, 1963 in Richmond, aged 88, of chronic myocarditis. Graduate of Rush Medical College, Chicago, Illinois, 1900. Licensed in California in 1900. Doctor Abbott was a member of the Alameda-Contra Costa Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

AVERBOOK, MARVIN S., Beverly Hills. Died September 11, 1963, in Los Angeles, aged 58, of acute coronary artery occlusion. Graduate of the University of Michigan Medical School, Ann Arbor, 1930. Licensed in California in 1946. Doctor Averbook was a member of the Los Angeles County Medical Association.

BARRON, HOMER MARTIN, Long Beach. Died September 5, 1963, in Long Beach, aged 65, of a skull fracture caused from a fall. Graduate of the University of Nebraska College of Medicine, Omaha, 1923. Licensed in California in 1925. Doctor Barron was a member of the Los Angeles County Medical Association.

BERNSTEIN, HAROLD CARROLL, Beverly Hills. Died October 1, 1963, in Los Angeles, aged 55, of heart disease. Graduate of the University of Illinois College of Medicine, Chicago, 1934. Licensed in California in 1937. Doctor Bernstein was a member of the Los Angeles County Medical Association.

CARLSON, HERBERT A., Long Beach. Died September 28, 1963, in Long Beach, aged 66, of coronary sclerosis with pulmonary fibrosis. Graduate of the University of Minnesota Medical School, Minneapolis, 1924. Licensed in California in 1942. Doctor Carlson was a member of the Los Angeles County Medical Association.

CLARKE, R. MANNING, National City. Died September 27, 1963, aged 80. Graduate of George Washington University School of Medicine, Washington, D.C., 1907. Licensed in California in 1912. Doctor Clarke was a retired member of the San Diego County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

DAVIS, RICHARD LLOYD, Salinas. Died August 26, 1963, in Malad, Idaho, aged 48, of heart disease. Graduate of Northwestern University Medical School, Chicago, Illinois, 1941. Licensed in California in 1943. Doctor Davis was a member of the Monterey County Medical Society.

DICKINSON, EVERETT HOMER, Modesto. Died October 4, 1963, near Fort Bragg, aged 66. Graduate of the Hahnemann Medical College and Hospital of Philadelphia, Pennsylvania, 1921. Licensed in California in 1950. Doctor Dickinson was an associate member of the Stanislaus County Medical Society.

DONOVAN, JOHN A., San Diego. Died October 1, 1963, aged 58. Graduate of the College of Osteopathic Physicians and Surgeons, Los Angeles, 1938. Licensed in California in 1938. M.D. degree from the California College of Medicine, 1962. Doctor Donovan was a member of the Forty First Medical Society.

GILLIATT, WILLIAM HENRY, Coalinga. Died September 27, 1963, in Fresno, aged 59. Graduate of Boston University School of Medicine, 1931. Licensed in California in 1932. Doctor Gilliatt was a member of the Fresno County Medical Society.

MCCLELLAND, ELMER E., Panorama City. Died by drowning, September 29, 1963, at Seppulveda, aged 61. Graduate of the University of Nebraska College of Medicine, Omaha, 1926. Licensed in California in 1949. Doctor McClelland was a member of the Los Angeles County Medical Association.

NORTON, CHARLES J., Sherman Oaks. Died August 27, 1963, in Glendale, aged 48, of viral myocarditis. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1946. Licensed in California in 1947. Doctor Norton was a member of the Los Angeles County Medical Association.

PRICHARD, HUBERT J., Long Beach. Died September 26, 1963, in Long Beach, aged 49, of heart disease. Graduate of the University of Louisville School of Medicine, Kentucky, 1935. Licensed in California in 1945. Doctor Pritchard was a member of the Los Angeles County Medical Association.

QUILLEN, EDWARD DELBERT, Los Angeles. Died October 3, 1963, in Los Angeles, aged 65, of coronary thrombosis. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1928. Licensed in California in 1928. Doctor Quillen was a member of the Los Angeles County Medical Association.

RITACCA, VINCENT J., Pomona. Died September 30, 1963, in Claremont, aged 46. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1944. Licensed in California in 1944. Doctor Ritacca was a member of the Los Angeles County Medical Association.

RUSSELL, MURRAY, Garden Grove. Died September 8, 1963, in Garden Grove, aged 49, of coronary thrombosis. Graduate of New York University College of Medicine, New York, 1937. Licensed in California in 1946. Doctor Russell was a member of the Orange County Medical Association.

SALOMON, EDWARD, San Francisco. Died September 17, 1963, in Ross, aged 72, of cancer. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1916. Licensed in California in 1916. Doctor Salomon was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

SENFELD, SIDNEY, Los Angeles. Died September 26, 1963, in New York, N.Y., aged 52, of a coronary. Graduate of the University of Arkansas School of Medicine, Little Rock, 1937. Licensed in California in 1948. Doctor Senfeld was a member of the Los Angeles County Medical Association.

WORKS, ROYAL LEONE, Los Angeles. Died September 21, 1963, in Los Angeles, aged 70, of carcinoma of lung. Graduate of Rush Medical College, Chicago, Illinois, 1919. Licensed in California in 1936. Doctor Works was a member of the Los Angeles County Medical Association.

# PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, M.D., M.P.H.  
Director, State Department of Public Health

*Cancer Registration and Survival in California*, a monograph prepared by the staff of the California Tumor Registry of the department's Bureau of Chronic Diseases, is ready for distribution.

The monograph is based on a total of 110,229 cancer cases initially diagnosed in 37 hospitals between January 1, 1942 and December 31, 1956, and reported to the California Tumor Registry.

The Registry annually receives abstracts of approximately 20,000 cancer cases—about one-third of the cancer cases newly diagnosed in the state each year. A total of 250,000 cases has now been reported, and follow-up of patients is 93 per cent complete.

This large body of data (the Registry is the largest in the United States) makes possible the comprehensive analysis of a broad spectrum of patients with cancer, by individual site, and by sex, age, race, stage of disease and type of hospital. Computer tabulations facilitated the use of more refined statistical techniques.

The monograph, a 400 page publication, is divided into twenty sections including Stage of Disease, First Course of Treatment, Survival, County and Private Hospitals, Cancer of the Stomach, Cancer of the Lung, Cancer of the Breast, Cancer of the Uterus, Cancer of the Prostate, and Leukemia.

The data show that lung cancer, especially among males, constitutes an increasing proportion of all cancer. Stomach cancer, on the other hand, has become a smaller constituent of the cancer problem, both for men and for women.

In 40 per cent of cancer patients the disease was diagnosed while it was still localized to the primary

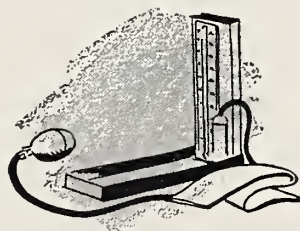
site. Earlier case finding has increased the proportion of cases in which the disease was localized at time of initial diagnosis. Most of the improvement in early diagnosis occurred in sites accessible to direct examination.

White persons generally had a higher proportion of localized disease than did non-white. County hospitals had a smaller proportion of cancer patients with localized disease (25 per cent) than private hospitals (46 per cent). Negroes in private hospitals, however, had a higher proportion of localized cases than white persons in county hospitals.

Finding more lesions while they were still in a localized stage has been one of the factors responsible for an increase in the survival of cancer patients. The improvement in survival rates was most pronounced for women, paralleling the sizable increase in the proportion of women with localized cancer at time of diagnosis. Survival rates for males showed only slight improvement in recent years.

Leukemia cases showed a bimodal distribution, with one peak in the group under 15 years of age and another in the age group 65-74. The one-year and three-year survival rates for leukemia patients increased between the time period 1942-46 and 1952-56, but the five-year rates remained the same, suggesting some short-term improvement for acute cases resulting from the use of antileukemic agents.

These are some "bare bones" of the monograph *Cancer Registration and Survival in California*. The publication contains fuller discussion as well as additional data. Copies of the monograph are available on request from the California Tumor Registry, Bureau of Chronic Diseases, California State Department of Public Health, 2151 Berkeley Way, Berkeley, California.







# WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION

## Education and Research Foundation

The A.M.A. Education and Research Foundation made important strides after coming into being in January of 1962 as successor to the American Medical Education Foundation (A.M.E.F.) and the American Medical Research Foundation (A.M.R.F.). It launched a new Medical Education Loan Guarantee program, which by last year's end had made notable progress in helping to bridge the gap between the financial resources of medical students, interns and residents and the expenses they incur in pursuing a long and costly training period. Physicians and their families and friends contributed a record amount to the Funds for Medical Schools program, while giving generously at the same time to the Loan Guarantee program.

The Auxiliary's concern for the financial needs of medical colleges and students, interns and residents prompts interest in seeking funds to support these two major A.M.A.-E.R.F. programs:

### 1. *Funds for Medical Schools*

Contributions may be divided among all schools or designated for one particular school. This program provides the deans of medical schools with an unrestricted source of funds.

### 2. *Loan Guarantee Fund*

Contributions may not be designated for a particular school. Financial support, at any period of their training, is available for medical students, interns and residents. For every dollar set aside as a guarantee by A.M.A.-E.R.F., the private banking industry loans \$12.50 at a maximum rate of 6 per cent simple interest. Loans will be repaid in installments, beginning five months after training is completed. Nearly one of every ten medical students in the country now has borrowed under A.M.A.-E.R.F.'s Loan Guarantee Program.

More funds are needed to offset the \$10 million annual operating deficit in our medical schools, and to meet the estimated 7,500 applications this next year for loans made possible by the Loan Guar-

antee Fund. Private support is becoming increasingly overshadowed by support from the Federal Government. Voluntary contributions with no strings attached are more significant today than ever before.

The Woman's Auxiliary to the American Medical Association contributed \$278,410.35 to A.M.A.-E.R.F. this year, which is an increase over last year, and a little more than \$3 per capita. Year after year, there has been a succession of increased annual amounts contributed through the auxiliaries, which is good, but not good enough in preserving the heritage of American Medicine. To be sure, many individuals gave much more; but if everyone contributed something, this per capita would rise sharply. The Auxiliary must acquaint each member with the reasons for the Education and Research Foundation and the real need of our assistance, by working harder than ever before for fund raising events in each county auxiliary—events that will also allow our non-medical friends to have a part in meeting the growing demands of the A.M.A.-E.R.F. program.

A.M.A.-E.R.F. fund raising events are enjoyable. While they vary from county to county, and must be determined by the county group in consultation with their doctor advisors, each event is distinct in its own right. One common ingredient is found—enthusiasm and a sincerity of purpose. Fund raising ideas are numerous—fashion shows, theater parties, silver teas, bridge parties, hat auctions, white elephant sales, sip and sample parties, charity dances, "weigh-in" parties, "way-out" parties, barbecues and auctions. One group, in addition to a one-time big project, asks that each member "buy" a Sympathy or In Appreciation card for \$5.00 or more; and have it on hand for use when the occasion arises. This adds a tidy little sum to the annual contribution.

The playing card project will be continued this year on the same basis as before. A minimum of two dozen sets must be ordered to keep the low price of \$0.55 per deck or \$1.10 for a box of two decks. These are sold by the auxiliaries for as low as \$2.25

to \$3.00 per box. The cards have the A.M.A.-E.R.F. insignia on them and are available in six colors. The sale of the new A.M.A.-E.R.F. note paper and envelopes, supplied free-of-charge through Chicago, has also gained momentum in many of the counties.

Although many of our California counties have had tremendous success with a Christmas card of their own design, and we do not recommend that this be changed. National this year is introducing a plan through the Medallion Cardcrafters projected for the smaller counties and for those who asked for a card plan and want to use it. The guiding thought has been to find a workable plan, offering a number of Christmas card designs suitable for every taste and appealing to people in all sections of the United States. There are approximately 150 designs with religious, traditional and contemporary motifs available in each price category. Prices range from \$13.50 to about \$60.00 per 100 cards, including the printing of name and sentiment. Funds come back to A.M.A.-E.R.F. as follows: 30 per cent commission on all orders, plus a 5 per cent bonus, plus a donation of 5 per cent from Medallion at the end of the season. Orders go directly to the card company, which handles the shipping and invoicing to the customer. All correspondence, acknowledgment of orders and commission checks are sent to the State Chairman.

The states which had the highest amount of dollar contributions for the year 1962-1963, ending June 7, 1963, are as follows: Ohio, \$33,702.52; California, \$32,978.91; Texas, \$21,661.60. It was heart-breaking to learn that Ohio topped California by only \$723.61 on a national level. California's contribution of \$32,978.91 is better than \$3.96 per capita for our 8,329 members. We increased our contribution \$9,803.37 over the previous year, or a gain of 42 per cent, which again is good, but not good enough. Following are yearly contributions from the State of California in the period 1952-1963:

1952-1953 .....	\$ 1,400.00	1958-1959 .....	\$ 8,129.62
1953-1954 .....	4,712.74	1959-1960 .....	13,754.73
1954-1955 .....	11,335.99	1960-1961 .....	16,659.20
1955-1956 .....	7,143.06	1961-1962 .....	23,175.54
1956-1957 .....	7,027.01	1962-1963 .....	32,978.91
1957-1958 .....	7,583.60		

The largest per capita contribution was in Tennessee (\$11.95); Alaska was second (\$11.22) and Idaho third (\$8.71).

Contributions from Los Angeles County totalled \$8,854.36, the largest amount from any county in the state and in the nation. San Luis Obispo took top honors in the state on a per capita basis with its contribution of \$1,166.00 for 81 members, or \$14.36 each. The counties giving the largest contribution in each of five membership categories are:

Shasta-Trinity (26-60), San Luis Obispo (61-100), Sonoma (101-200), Orange (201-500), and Los Angeles (500 plus). Certificates of Achievement were presented at the Fall Conference of Woman's Auxiliary to the California Medical Association in Sacramento on September 24, 1963.

And so we begin another year dedicating our time and efforts to A.M.A.-E.R.F. Let us remember, we are preserving our freedom and our traditional way of life with free enterprise and not governmental control by supporting this worthy cause. Will you help us in 1963-1964?

MRS. WARREN GOUX  
*State A.M.A.-E.R.F. Chairman*

### Woman Power

EVERY PHYSICIAN in the State of California whose wife does not belong to the Auxiliary of the California Medical Association should be concerned. We cannot communicate with his wife.

In our continuous battle to defeat the enemies of free enterprise, we can leave no stone unturned. Every wife is needed. If we cannot communicate our plans and needs to her, we will be defeated on the home front.

At the American Medical Association Interim Meeting held in Denver, 1961, "woman-power" came in for full appreciation by the members of the profession, and it was recommended that "all physicians encourage and assist their wives to participate in the Auxiliary's continuing constructive programs."

Have you urged your wife to participate? Will you be willing to pay her dues so that we may communicate with her? She will find herself in an organization that is working with a unity of purpose to promote a program of desirable public health on a free enterprise level. Although we are not a social organization, we work to encourage kindly social relationships among physicians' families.

Our potential of 17,000 women in California working to perfect and protect medicine's image in their own communities is one to be desired. We want each of these women to know what Medicine is *for*, not just what it is against. We are *for* helping those who need help; we are *for* a free profession.

Will you urge your County Society to include the Auxiliary dues with your society dues, so that every wife will become a partner of her husband in his fight for freedom.

MRS. LYLE F. MURPHY  
*First Vice President  
 Membership Chairman*



# INFORMATION

## Health Care

Expenditures in Welfare Programs\*

*A Report of the Bureau of Research and Planning, California Medical Association*

THE EXPENDITURE of large sums of money in order to provide a subsistence level of living for the indigent population in California has been recently reviewed by the Welfare Study Commission.† A significant portion (13.2 per cent) of the total public welfare bill is allocated to the purchase and the provision of health care services. Any evaluation of the role of health care services, would necessarily involve a review of the social goals of each of the Public Welfare programs under which such services are provided. This summary is limited to a review of current cost allocations for the various programs.

Although the different amounts are great and will undoubtedly continue to increase, it should be observed that some of these expenditures are a reflection of other "soft spots" in our economy, namely the high degree of unemployment found in that portion of the labor force made up of unskilled workers whose ethnic characteristics and educational level have made job mobility a difficult achievement.

Although Public Welfare expenditures will continue to increase, it should be noted that at least a portion of the program has expectations of growing

\*Department of Social Welfare, *Public Welfare in California*, Annual Statistical Report 1961-1962.

†Welfare Study Commission, Fiscal Report, June, 1963.

For the fiscal year 1961-62 approximately \$75.6 million, or 13 per cent, of all welfare expenditures which totaled \$571.4 million were allocated for the procurement of health services for persons in California.

The largest proportion of health care expenditures (47.5 per cent) was for persons under the Old Age Security program. OAS and MAA combined represents over 70 per cent of such expenditures.

The largest group of recipients was that of the Aid to Needy Children program. However, this program was responsible for about one-fifth of health care expenditures for all programs.

The percentage of monies for physicians' visits ranged from almost 20 per cent in the Aid to Needy Disabled health care program to 39 per cent in the Aid to Needy Children health care program. It was 31 per cent in the OAS program.

The average cost per beneficiary month under the MAA program was approximately \$280; for those receiving hospital care it was \$385, and for those receiving nursing home care, \$190.

at a decreasing rate as more of the aged become eligible for coverage under OASDI benefits.

Persons receiving benefits under Old Age Security represented 40.4 per cent of all recipients excluding General Relief Recipients; this category received approximately 47.5 per cent of the \$75.6 million expended for medical care in the 1961-62 fiscal year. (Table 1.)

Persons covered under the Aid to Needy Children program were 53.1 per cent of the total receiving medical care; however, these persons utilized 21.2 per cent of all money expended for health care services in all programs.

The Medical Assistance to the Aged program became operative during the last half of the fiscal year (January 1, 1962). Although the data on this program are only for a six-month period, and represent service to 1.7 per cent of all persons on Welfare programs receiving medical care, 23.6 per cent of

TABLE 1.—Health Care Expenditures in California By Type of Program, July 1961-June 1962

	Recipients	Per Cent of Recipients	Amount of Medical Care Assistance	Per Cent of Program
Total assistance (does not include 84,776 people on General Home Relief)	623,088*	100.0	\$75,650,776	100.0
Old Age Security.....	251,740	40.4	35,919,795	47.5
Aid to Needy Blind.....	12,760	2.0	1,665,780	2.2
Aid to Potentially Self-Supporting Blind.....	313	<1.0	21,025	<1.0
Aid to Needy Children.....	330,703	53.1	16,017,063	21.2
Aid to Needy Disabled.....	16,942	2.7	3,111,411	4.1
Medical Assistance for the Aged.....	10,630†	1.7	17,844,484	23.6‡
Other General Relief.....	.....§	.....§	1,071,218	1.4

\*Communication from Department of Social Welfare, April 24, 1963.

†Monthly average of persons on whose behalf payments for M.A.A. were made for the first six month period in which the program was in operation.

‡Based on six months of operation (January 1, 1962-June 30, 1962).

§Number of recipients were not indicated by State Department of Social Welfare.

TABLE 2.—Average Expenditures for Medical Care in California Per Recipient Per Month By Class of Service and By Type of Program, Fiscal Year Ending June 30, 1962

Class of Service	Old Age Security*		Aid to Needy Blind†		Aid to Potentially Self-Supporting Blind*		Aid to Needy Children*				Aid to Needy Disabled†	
							Family Groups		Boarding Homes & Institutions			
Prescription drugs.....	\$ 3.13	26.3%	\$ 3.51	31.8%	\$1.78	31.8%	\$0.89	21.9%	\$0.49	15.2%	\$ 4.13	25.5%
Dental care.....	1.52	12.8	1.20	10.9	1.14	20.4	1.02	25.1	1.27	39.3	1.82	11.3
Physician visits.....	3.67	30.9	3.51	31.8	1.35	24.1	1.60	39.3	1.04	32.2	3.19	19.7
Eye care.....	0.95	8.0	0.28	2.5	0.22	3.9	.....	0.0	.....	0.0	0.85	5.3
Rehabilitative services.....	0.43	3.6	0.20	1.8	.....	0.0	.....	0.0	.....	0.0	3.32	20.5
All other.....	2.19	18.4	2.35	21.3	1.11	19.8	0.56	13.7	0.43	13.3	2.87	17.7
TOTAL.....	\$11.89	100.0%	\$11.05	100.0%	\$5.60	100.0%	\$4.07	100.0%	\$3.23	100.0%	\$16.18	100.0%

\*Based on total number of persons in the caseload.

†Based on the total number of persons in the caseload eligible for Public Assistance Medical Care.

TABLE 3.—Medical Assistance for the Aged in California, Expenditures by Type of Service (January 1, 1962-June 30, 1962\*1

Type of Service	Average Number of Beneficiary Months†	Expenditures	Average per Beneficiary Month
Total inpatient services.....	10,630‡	\$17,842,216	\$279.75
Hospital care.....	4,348	10,045,552	385.09
Nursing homes.....	6,282	7,181,700	190.53
Other care, not included in monthly or per diem rates.....			
In hospitals.....	.....§	136,562	5.24
In nursing homes.....	.....§	478,402	12.69
Total outpatient service.....	.....§	2,268	.....§
Drugs.....	.....§	504	.....§
Physicians' visits.....	.....§	481	.....§
Other cases.....	.....§	1,283	.....§

\*Program effective January 1, 1962.

†Monthly average number of persons on whose behalf payments for MAA were made during the period.

‡Contains duplication caused by individuals for whom payments were made for more than one type of case.

§Data not available.

health care expenditures went for nursing home, hospital, and professional services.

Table 2 shows the average monthly expenditures per recipient by program and type of service provided.

It also indicates the percentage distribution of expenditures for services procured, by type of program. In three of the six programs physician services represented 30 per cent or more of the total expenditures for health care services. However, expenditures for drugs and prescriptions and dental care also were significant portions of the total cost of medical care services provided. The basic services under Medical Assistance for the Aged are included in Table 3 since the categories of service differ from

the other programs in the Department of Social Welfare Annual Report.

Table 3 indicates the number of persons receiving care (average number of beneficiaries on whose behalf payments for Medical Assistance for the Aged were made during the six-month period), expenditures for such care, and the average cost per recipient per beneficiary month. The total number of certificate holders approved for the Medical Assistance for the Aged programs during its first six months of operations was 19,615, but during June, 1962, only 15,454 certificate holders were active.

California Medical Association, 693 Sutter Street, San Francisco, California 94102.





# Federal Medical-Health Care Services

Appropriations for Fiscal Year 1963  
(July 1, 1962 to June 30, 1963)

## A Report of the Bureau of Research and Planning, California Medical Association

THE FOLLOWING DATA on appropriations indicates the role of the Federal Government in providing funds for the procurement of health care services in the public sector of our economy. This report, like the A.M.A. report from which it was taken, states that . . . "No attempt is made to evaluate the programs—to rate them good, bad, indifferent, as wasteful or invaluable." None of these programs is evaluated in terms of good or bad. This report does not include administrative expenses for mental health loans made by the Small Business Administration and the agencies where it is impossible to separate medical costs from enforcement costs, i.e. Bureau of Narcotics.

### Department of Health, Education, and Welfare

Fiscal '63 .....	\$2,471,228,000
Fiscal '62 .....	2,096,341,000
Increase .....	18%

#### 1. Division of Hospital Facilities

These appropriations represent aspects of both the original and categorical Hill-Burton programs. The remainder of this appropriation is allocated for administrative expenses and research.

Fiscal '63 .....	\$226,200,000
Fiscal '62 .....	221,500,000
Change .....	+ 2%

#### 2. National Institutes of Health

These appropriations are ear-marked for such Institutes and Projects as the National Cancer Institute, the National Heart Institute, Health Institute, Arthritis and Metabolism Disease Institute, Neurological Diseases and Blindness Institute, Allergy and Infectious Disease Institute, National Institute of Dental Research and General Research and Services.

Fiscal '63 .....	\$880,800,000
Fiscal '62 .....	738,335,000
Change .....	+ 19%

#### 3. Community Health Activities

These activities include programs on accident prevention, chronic diseases and health of aged, tuberculosis control, communicable disease activities, venereal disease control, community health practice and research, dental

This Report is a summary of some of the major programs in the medical-health area carried on by numerous Federal agencies and other sectors where the government makes contributions to the medical-health field. The appropriations listed were made at the second session of the 87th Congress (1962) to carry out these various activities. These allocations amounted to over \$5 billion for the Fiscal Year 1963 (July 1, 1962 to June 30, 1963), amounted to an increase of over \$535 million over the previous year's appropriations. Though almost all of the numerous departments and agencies had their appropriations increased the major share of this increase (70 per cent) was allocated to the Department of Health, Education and Welfare. Of this amount, almost three-quarters was earmarked for use by the National Institutes of Health and the Bureau of Family Services.

This Report, like the A.M.A. report from which it was taken, makes "No attempt . . . to evaluate the programs—to rate them, good, bad, indifferent, as wasteful or invaluable."

services and resources, and nursing services and resources.

Fiscal '63 .....	\$ 88,885,000
Fiscal '62 .....	71,580,000
Change .....	+12%

#### 4. Environmental Health Activities

The following programs are included under this category: Air pollution, milk, food, interstate and community sanitation; occupational health; radiological health; and water supply and water pollution control.

Fiscal '63 .....	\$ 64,309,000
Fiscal '62 .....	51,180,000
Change .....	+26%

#### 5. Bureau of Family Services (Medical Payments)

These appropriations cover the Federally-aided public assistance programs for such expenditures as payments to physicians, hospitals, pharmacists, nursing homes, etc., and also directly to recipients to enable them to meet their medical care needs. This increase over Fiscal '62 reflects expanded Old-Age Assistance Medical Care Programs, the Medical Assistance for the Aged Program and Social Security Amendments of 1960.

Fiscal '63 .....	\$607,500,000
Fiscal '62 .....	533,646,000
Change .....	+ 13%

#### 6. Office of Vocational Rehabilitation

Grants to states to support basic rehabilitation services, the extension and improvement of such programs, and appropriations for research and training.

Fiscal '63 .....	\$100,926,000
Fiscal '62 .....	87,025,000
Change .....	+ 16%

Source: Federal Medical-Health Appropriations for Fiscal 1963, Legislative Department, A.M.A.

7. There are a large number of other activities for which appropriations were made; some of these include the programs of the Children's Bureau, Food and Drug Administration, Public Health Services Building and Facilities, Office of Surgeon General, National Library of Medicine, Saint Elizabeths Hospital, Federal Surplus Property, Donations Programs and others.

Fiscal '63 .....	\$502,608,000
Fiscal '62 .....	446,621,000
Change .....	+ 13%

#### Veterans Administration

Fiscal '63 .....	\$1,137,981,000
Fiscal '62 .....	1,108,769,000
Increase .....	3%

#### 1. In-patient care in Veterans Administration Hospitals

Fiscal '63 .....	\$868,605,000
Fiscal '62 .....	841,939,000
Change .....	+ 3%

#### 2. Out-patient Care

Fiscal '63 .....	\$ 94,468,000
Fiscal '62 .....	93,092,000
Change .....	+ 3%

#### 3. All Other

Includes Construction of hospitals and domiciliaries, domiciliary care, medical research and education, contract hospitalization and medical administration.

Fiscal '63 .....	\$174,908,000
Fiscal '62 .....	173,738,000
Change .....	Less than 1%

The following are broad categories covering Departments, Commissions, and Foundations providing health services, and/or programs for members of the Armed Forces, Federal Employees and qualified civilian groups.

#### 1. Department of Defense

Fiscal '63 .....	\$915,117,000
Fiscal '62 .....	894,506,409
Change .....	+ 2%

#### 2. Federal Employees Health Insurance Programs

Fiscal '63 .....	\$148,172,000
Fiscal '62 .....	135,011,000
Change .....	+ 10%

#### 3. Department of State

Fiscal '63 .....	\$132,324,080
Fiscal '62 .....	79,642,172
Change .....	+ 66%

#### 4. Atomic Energy Commission

Fiscal '63 .....	\$ 71,553,000
Fiscal '62 .....	64,695,000
Change .....	+ 11%

#### 5. National Science Foundation

Fiscal '63 .....	\$ 57,500,000
Fiscal '62 .....	49,000,000
Change .....	+ 17%

#### 6. National Aeronautical and Space Administration

Fiscal '63 (est.) .....	\$ 38,500,000
Fiscal '62 .....	13,328,000
Change .....	+ 189%

#### 7. Department of Labor

Fiscal '63 .....	\$ 10,339,000
Fiscal '62 .....	9,578,612
Change .....	+ 8%

#### 8. All other Departments, Agencies and Commissions

Fiscal '63 .....	\$ 33,613,580
Fiscal '62 .....	29,452,820
Change .....	+ 14%

#### Total Appropriations

Fiscal '63 .....	\$5,022,955,666
Fiscal '62 .....	4,467,313,000
Change .....	+ 12%

California Medical Association, 693 Sutter Street, San Francisco, California 94102.





# NEWS & NOTES

## NATIONAL • STATE • COUNTY

### LOS ANGELES

Development of research facilities, fiscal guidance and physical plant improvement are to be the objectives of the now-forming Development Advisory Committee of the **California College of Medicine, Los Angeles**.

A special steering committee representing the college's Board of Trustees and the California Medical Association is now drafting the general goals for the advisory group and is screening names of possible members of that group.

Chairman of the steering committee is Mr. Philip Magruder, C.C.M. trustee and former president of General Petroleum Corporation. Serving with him is fellow-trustee Mr. Paul W. Easton, retired vice-president of Union Ice Company.

Other members of the steering committee are Dr. Samuel R. Sherman, president, and Dr. Omer W. Wheeler, immediate past-president, of the California Medical Association, and Dr. Richard L. Taw, president of the Los Angeles County Medical Association.

### SAN FRANCISCO

**Dr. Robert C. Combs**, San Francisco, has been appointed to the State Board of Medical Examiners by Governor Edmund Brown. He succeeds Dr. Sidney Shipman of San Francisco, a past-president of the California Medical Association, who has resigned.

A coordinated weekly program designed to reach every Californian with informational material on matters of health and medical economics has been undertaken by the California Medical Association Bureau on Communications.

The program, using newspaper, radio and television concurrently, is called "The World of Medicine." It will begin within the next few weeks in all three media on a public service basis.

Newspaper cartoons in the style made popular by Ripley will vignette facets of medicine dealing with health information, career recruitment, medical traditions, medicine's accomplishments under free enterprise and historical illustrations of social and economic factors of medical care.

These will also be projected to radio and television by means of one-minute announcements.

The feature, carrying the signature of the California Medical Association and copyrighted by Lawren Productions of San Mateo, is projected for a six months' trial for evaluation of professional and public reaction. To avoid duplication, distribution to newspapers will be limited at the outset to those weeklies not now using the C.M.A. "Health Tips."

**Dr. Francis L. Chamberlain**, San Francisco, and Dr. Helen B. Taussig, Baltimore, received **Gold Heart Awards** from the American Heart Association at the Association's annual meeting which was held in Los Angeles late last month. The awards were given in recognition of contributions the recipients have made in the field of cardiovascular research and education. Dr. Chamberlain pioneered in the development of cardiac catheterization and Dr. Taussig in surgical operations on the heart.

### SAN MATEO

**Dr. Harold Chope**, director of public health and welfare, San Mateo County, will be honored at the annual meeting of the American Public Health Association, November 14 in Kansas City, with the **Bronfman Prize** for Public Health Achievement. The award cites the recipient as a "dynamic and imaginative administrator of comprehensive community services which uniquely integrate the physical, mental and social components essential to a healthy democratic society."

### VENTURA

**Dr. Anthony N. Toto**, associate superintendent at Camarillo State Hospital, has been appointed superintendent of Fairview State Hospital for the mentally retarded, Costa Mesa State Director of Mental Hygiene Dr. John Porterfield announced recently.

### GENERAL

**Special fellowships** for the National Football Foundation's scholar-athletes who indicate their intention of entering medical school have been established by The Medical Economics Foundation, an organization founded and supported by *Medical Economics* magazine.

The medical scholarship trust is geared to provide \$2,500 annually, which will be divided among any of the eight selected football scholar-athletes who have elected to attend medical school within one year of graduation from college.

\* \* \*

An innovation in medical meetings—a conference designed for and participated in by "new physicians" in their first five years of practice—is scheduled for the Riviera Hotel in Las Vegas, December 8-11.

Conducted under the direction of the Alumni Council of the **Student American Medical Association**, the meeting will feature two "New Physician Research Forums"—one a multidisciplinary presentation of formal papers; the other, a series of round table discussions on such topics as "Quo Vadis—The New Physician's Place in the Changing Social and Political Scene," "Trends in Psychiatry" and "Modern Surgery." Participants in the formal presentations and round table discussions will be physicians in their first five years of practice.

\* \* \*

The first certification examination, election of two honorary members and passage of a resolution to support the American Medical Association on all basic legislative issues highlighted the seventh annual convention of the **American Association of Medical Assistants**, held October 9-13, in Miami Beach. More than 450 medical assistants and guests attended the meeting.

Mrs. Lillie Woods, San Francisco, was elected to the Board of Trustees for a three-year term.

# EDUCATION NOTICES

## MEETINGS AND COURSES

### COMMITTEE ON CONTINUING MEDICAL EDUCATION

THIS BULLETIN of the dates of continuing education programs and the meetings of various medical organizations in California is supplied by the Committee on Continuing Medical Education of the California Medical Association. In order that they may be listed here, please send communications relating to your future meetings or postgraduate courses to Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco, California 94102.

### MEDICAL MEETINGS

#### NOVEMBER MEETINGS

Nov. 20—**Los Angeles County Heart Association.** "Application of Computers in Cardiovascular Disease." Los Angeles County Medical Association. Wednesday. 9:00 a.m.-4:30 p.m. Contact: Richard S. Cosby, M.D., Los Angeles County Heart Association, 2405 West 8th Street, Los Angeles 90057.

#### DECEMBER MEETINGS

Dec. 2-6—**American College of Chest Physicians,** Postgraduate Course on Diseases of the Chest. Ambassador Hotel, Los Angeles. Monday-Friday. 9:00 a.m.-5:00 p.m. Contact: Alfred Goldman, M.D., program chairman, 416 N. Bedford Drive, Beverly Hills.

Dec. 2-6—**American College of Physicians** Postgraduate Course. "Psychiatry for the Internist," Phil R. Manning, M.D., and Allen J. Enelow, M.D., co-directors. Los Angeles County General Hospital. Monday-Friday. Members \$60. Non-members \$100. Contact: Edward C. Rosenow, Jr., M.D., executive director, 4200 Pine Street, Philadelphia.

Dec. 3-6—**Scripps Clinic and Research Foundation.** "Advances in Cardiovascular Diseases." La Jolla. Tuesday-Friday. \$100. Contact: Harold Lowe, M.D., assistant program chairman, Scripps Clinic, La Jolla.

Dec. 4—**Medical Staff St. Luke Hospital, Pasadena.** "Medicine Out of Doors." Wednesday. 9:00 a.m.-5:00 p.m., lunch included. Reservations only. Contact: Casimir Harris, M.D., St. Luke Hospital, Pasadena.

Dec. 5-7—**West Coast Allergy Society,** Annual Meeting. Las Vegas, Nevada. Thursday-Saturday. 9:30 a.m.-5:00 p.m. Non-members \$25.00. Contact: Jack M. Chesebro, executive secretary, 1818 S.E. Division, Portland 2, Oregon.

Dec. 6—**Southern California Public Health Association.** Annual Meeting. Huntington-Sheraton Hotel, Pasadena. Friday. 9:00 a.m.-4:30 p.m. Members \$1. Non-members \$2. Contact: Bernard Weintraub, secretary, Los Angeles City Health Dept., 111 East 1st Street, Los Angeles.

Dec. 13-15—**California Society of Pathologists** Annual Meeting. Riviera Hotel, Palm Springs. Friday-Sunday. Contact: W. K. Bullock, M.D., secretary, Los Angeles County Hospital, Dept. of Pathology, Los Angeles.

#### JANUARY MEETINGS

Jan. 6-10—**American College of Physicians** Postgraduate Course. "Nuclear Medicine and Radiation Biology," Joseph Ross, M.D., F.A.C.P., director. University of California Medical Center, Los Angeles. Monday-Friday. Members \$60. Non-members, \$100. Contact: Edward C. Rosenow, M.D., executive director, The American College of Physicians, 4200 Pine Street, Philadelphia.

Jan. 8.—**Los Angeles County Heart Association** 8th Annual Midwinter Symposium. Statler-Hilton Hotel, Los Angeles. Wednesday. 9:00 a.m.-4:00 p.m. Contact: Morton H. Maxwell, M.D., Los Angeles County Heart Association, 2405 West Eighth Street, Los Angeles 90057.

Jan. 8.—**Los Angeles Radiological Society.** Wednesday. Contact: Bernard J. O'Loughlin, M.D., executive secretary, Dept. of Radiology, UCLA Center for the Health Sciences, Los Angeles 90024.

Jan. 9.—**Los Angeles Pediatric Society** Third Parmelee Lecture. Ambassador Hotel, 3400 Wilshire, Los Angeles. Thursday. 6:30 p.m. Contact: Wm. D. Mishbach, M.D., vice president, 17258 Ventura Boulevard, Encino.

Jan. 18.—**Orange County Heart Association** 9th Annual Symposium on Heart Disease. Charter House Hotel, Anaheim. Saturday. All day. \$15, including lunch. Contact: Howard G. Buswell, executive director, Orange County Heart Association, P.O. Box 1704, Santa Ana.

Jan. 24.—**Fresno County Heart Association** Twelfth Annual Physicians' Cardiovascular Symposium. Fresno Elks Club, 5080 East Kings Canyon Road. Friday. 9:00 a.m.-5:00 p.m. \$10. Contact: Frances Cuthbertson, executive director, Fresno County Heart Association, 1921 East Belmont Avenue, Fresno.

Jan. 25—**Childrens Hospital of Los Angeles** Second Clinical Conference in Pediatric Anesthesiology. Contact: M. Digby Leith, M.D., Childrens Hospital of Los Angeles, 4614 Sunset Boulevard, Los Angeles 27.

Jan. 30-31—**Conference on Comparative Atherosclerosis, Spontaneous and Experimental.** Sponsored by National Heart Institute, Los Angeles Heart Association, and American Heart Association. Beverly Hills Hotel, Beverly Hills. Thursday-Friday. 9:00 a.m.-5:45 p.m. \$10 each day. Registration limited to 500. Contact: Mrs. Elizabeth B. McCandless, 2405 West 8th Street, Los Angeles 90057.

#### FEBRUARY MEETINGS

Feb. 1-2—**Los Angeles Radiological Society.** 6th Annual Midwinter Radiological Conference, 1964. Biltmore Hotel, Los Angeles. Saturday-Sunday. \$25 (including 2 luncheon meetings). Contact: Mathew E. O'Keefe, M.D., publicity chairman, 402 East Hadley Street, Whittier.

Feb. 3-7—**San Diego Heart Association.** First Annual Postgraduate Seminar. Monday-Friday. Registration limited to 25. \$100. Contact: William J. Kuzman, 3545 - 4th Avenue, San Diego 92103.



Feb. 3-7—**American Thoracic Society.** Second annual postgraduate course: "The Evaluation of Pulmonary Function." Rancho Los Amigos Hospital, Downey. Monday-Friday. Members, \$75. Non-members, \$100. Registration limited to 90. Contact: Robert E. Randle, M.D., Pulmonary Function Course Planning Committee, 1670 Beverly Boulevard, Los Angeles 90026.

Feb. 6-9—**American College of Physicians.** Combined meeting: Northern California, Nevada, and Southern California. Tropicana Hotel, Las Vegas. Contact: Robert Escamilla, M.D., or George C. Griffith, M.D., 1136 West 6th Street, Los Angeles 90017.

Feb. 7-12—**American Academy of Allergy.** San Francisco. Contact: James O. Kelley, executive secretary, 756 N. Milwaukee, Milwaukee 53212.

Feb. 8-9—**Los Angeles Obstetrical and Gynecological Forum.** For younger specialists and General Practitioners who emphasize obstetrics and gynecology. Ambassador Hotel, Los Angeles. Saturday-Sunday. \$25. Residents and Interns, \$9.00. Contact: Dee Davis, executive secretary, Los Angeles Obstetrical and Gynecological Forum, 5410 Wilshire Boulevard, Los Angeles 90036.

Feb. 10-14—**Obstetrical and Gynecological Assembly of Southern California.** Nineteenth annual 5-day meeting for Specialists in the 13 Western States, Mexico, and Western Canada. Attendance limited. Monday-Friday. \$85.00. Contact: THE COMMITTEE, Obstetrical and Gynecological Assembly of Southern California, 5410 Wilshire Boulevard, Los Angeles 90036.

Feb. 13-15—**Society of University Surgeons.** Los Angeles. Thursday-Saturday. Contact: C. Frederick Kittle, M.D., University of Kansas Medical Center, Kansas City 66103.

Feb. 16-20—**Western Section, American Urological Association.** Fortieth Annual Meeting. Hotel Del Coronado, Coronado. Contact: M. J. Feeney, M.D., registration, 3415 Sixth Avenue, San Diego 92103.

Feb. 17-18—**Institute for Metabolic Research.** "Recent Additions to the Knowledge of Diabetes." Highland-Alameda County Hospital, Oakland. Monday-Tuesday. All day. Fee: to be determined. Contact: L. W. Kinsell, M.D., director, Institute of Metabolic Research.

#### MARCH MEETINGS

March 22-25—**CALIFORNIA MEDICAL ASSOCIATION 93rd Annual Session.** Scientific theme: "Immunology." Biltmore Hotel, Los Angeles. Sunday-Wednesday. Contact: Mr. John Hunton, executive secretary, 693 Sutter Street, San Francisco 94102.

## POSTGRADUATE EDUCATION

#### AUDIO-DIGEST FOUNDATION

**Audio-Digest Foundation** (a non-profit subsidiary of the California Medical Association) provides by subscription twice-a-month tape-recorded summaries of leading national meetings and authoritative surveys of current literature. Seven separate services in: General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, Anesthesiology, and Ophthalmology. A new Catalog of outstanding lectures and panel discussions in all areas of medical practice is also available. For information, write: Mr. Claron L. Oakley, Editor, 619 South Westlake Avenue, Los Angeles.

#### STANFORD UNIVERSITY

Jan. 6-March 14—**Tropical Health.** An intensive ten-week course covering Public Health Administration, Tropical Diseases, Medical Specialties relevant to the practice of medicine in tropical and sub-tropical areas, combined with general review of specific topics in medicine and surgery. Registration limited to 10. Stanford University School of Medicine. Monday-Friday. 8 hours per day. \$470. \$100 deposit and brief curriculum vitae must accompany application for registration. Make check payable to STANFORD UNIVERSITY. Applicants will be notified of acceptance by November 15. Contact: Quentin M. Geiman, Ph.D., Dept. of Preventive Medicine, Stanford University School of Medicine, 300 Pasteur Drive, Palo Alto.

#### UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Dec. 6-8—**Postgraduate Medical Symposium.** Pomona Valley Community Hospital. Friday-Sunday. 13 hours. \$25, including one dinner.

Jan. 11-12—**Indications and Complications of Psychotherapeutic Drugs.** Saturday-Sunday. 12 hours. \$30, including one lunch.

Jan. 13-May 11—**Teaching Clinics in the Psychiatric Aspects of Medical Practice.** Monday evenings. 36 hours.\*

Jan. 18—**Pediatrics.** Cedars of Lebanon Hospital, Los Angeles. Saturday. 6½ hours.\*

Jan. 19—**Obstetrics.** Cedars of Lebanon Hospital, Los Angeles. Sunday. 6½ hours.\*

Feb. 8-9—**Office Management of Urological Problems.** Saturday-Sunday. 9 hours.\*

Feb. 10—**Surgical Techniques Utilizing the Isolated Intestinal Segment in Urological Procedures.** Monday. 7 hours.\*

Feb. 10-Feb. 21—**Prosthetics—Orthotics.** Monday-Friday, 2 weeks. 90 hours. \$200.

Feb. 13-April 2—**Bedside Clinics.** Harbor General Hospital, Torrance. Thursday evenings. 16 hours.\*

Feb. 15-Feb. 19—**Advanced Seminars on Controversial Areas in Surgery.** Wonder Palms Hotel, Palm Springs. Saturday-Wednesday. 12 hours. \$100 plus room and meals.

Feb. 21-23—**Advanced Seminars in Reconstructive Surgery** (including Tissue Transplant and Chemotherapy). Friday-Sunday. 9 hours. \$100 plus room and meals.

Feb. 21-23—**Proctology.** Veterans Administration Hospital, West Los Angeles, and UCLA. Friday-Sunday. 15½ hours.\*

Feb. 26-Mar. 7—**Postgraduate Medical Lecture Series in Mexico City and Merida.** Monday-Friday. 26 hours. \$100. Including Merida, \$125.

Feb. 29—**Education for Marriage** (for the General Public). Saturday. 7 hours.\*

Feb. 29—**Internal Medicine.** Cedars of Lebanon Hospital, Los Angeles. Saturday. 6½ hours.\*

Dates by Arrangement—**Clinical Traineeship—Anatomy, Anesthesia, Dermatology, Pediatrics, Radioisotopes, Urology:** 2 weeks, \$150; 4 weeks, \$250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, 478-9711, Ext. 2114.

\*Fee to be announced.

## LOMA LINDA UNIVERSITY

As Arranged—**Traineeships** in clinical and other departments are available by arrangement with department chairmen of the Postgraduate Division. 80 hours minimum.

**Anesthesia**, 6 months. 250-300 hours. \$350.

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**Continuously—Illustrated Medical Lectures:** 30-minute tape recordings and accompanying 35-mm filmstrip, 50 to 80 full-color pictures for screen, hand or desk viewer. Available individually or by subscription. 12 or 36 titles per year, all titles produced in one year in any chosen specialty. Projectors and viewers included in subscription plans. Contact: Loma Linda University, Illustrated Medical Lectures, Los Angeles 33.

For course information contact: W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles, California 90033, ANgelus 9-7241, Ext. 214.

## PRESBYTERIAN MEDICAL CENTER

Dec. 7—**Practical Therapy of Functional Illness**. Saturday. 8 hours. \$25.

Jan. 11—**Medical Emergencies**. Saturday. 8 hours. \$25.

Jan. 25—**Surgical Emergencies**. Saturday. 8 hours. \$25.

Feb. 8—**Practical Proctology**. Lane Hall, Presbyterian Medical Center. Saturday. 9:00 a.m.-5:00 p.m. \$25.

For information contact: Arthur Selzer, M.D., chairman, Education Committee, Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15. WEst 1-8000.

## UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Dec. 5-7—**Symposium on Neuroectodermal Tumors and Melanomas of the Eye**. Thursday-Saturday. 15 hours. \$75.

Dec. 6-7—**Basic Electrocardiography**. Franklin Hospital, San Francisco. Friday-Saturday. 12 hours. \$40.

Dec. 7-8—**Psychiatric Perspectives in Medicine**. Stockton State Hospital. Saturday-Sunday. 12 hours. \$15.

Dec. 13-14—**Orthopedics: Problems of Soft Tissue Disease**. Friday-Saturday. 12 hours. \$40.

Jan. 11—**Adverse Reactions in Therapy**. Children's Hospital, San Francisco. Saturday. 6 hours. \$15.

Jan. 24-26—**Annual Symposium: Man and Civilization**. Friday-Sunday. 18 hours. \$25.

Jan. 29-April 22—**Practical Psychotherapy** (continued). Langley Porter Neuropsychiatric Institute. Wednesdays. 11:00 a.m.-5:00 p.m. 60 hours, \$25.

Feb. 3—**Medical Aspects of Well Being—Chronic Illness**. Monday. 8 hours. \$7.50.

Feb. 1-March 7—**Clinical Manifestations of Anxiety**. Herrick Memorial Hospital, Berkeley. Saturday evenings. 12 hours.\*

Feb. 13-14—**Genetics in Ophthalmology**. Thursday-Friday. 16 hours. \$60.

Feb. 21-23—**Three Days of Cardiology**. Friday-Sunday. 24 hours.\*

Feb. 24-28—**Course for Physicians in General Practice**. Monday-Friday. 32 hours. \$100.

**Continuously—Courses presented by special arrangement:**  
**Principles and Clinical Uses of Radioisotopes** (full time, one month).

For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MOntrose 4-3600, Ext. 179.

## UNIVERSITY OF SOUTHERN CALIFORNIA

Dec. 2-6—**Psychiatry for the Internist**. Los Angeles County Hospital. Monday-Friday.\*†

Dec. 4-Feb. 19—**Psychosomatic Case Conferences** (Section 1). Los Angeles County Hospital. Wednesday. 2 hours. 10 sessions. \$25.

Dec. 4-Feb. 19—**Psychosomatic Case Conferences** (Section 2). Glendale Memorial Hospital. Wednesdays. 2 hours. 10 sessions. \$25.

Dec. 13-15—**The Illness as Social Communication**. Palm Springs. Friday-Sunday. \$25.

**Continuously—Basic Home Course in Electrocardiography**. One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$100. Physicians may register at any time.

**Continuously—Advanced Home Course in Electrocardiography**. One year postgraduate series, ECG interpretation by mail. Fifty-two issues \$85. Physicians may register at any time.

For course information contact: Phil R. Manning, M.D., Assoc. Dean, Postgraduate Division, USC School of Medicine, 2025 Zonal Ave., Los Angeles 33, CApital 5-1511, Ext. 9.

## CALIFORNIA MEDICAL ASSOCIATION

### Committee on Continuing Medical Education 14th Annual Postgraduate Institutes, 1964

Feb. 6-7—**SOUTHERN COUNTIES**, in cooperation with University of California School of Medicine, San Francisco. "Newer Diagnostic Methods." El Mirador Hotel, Palm Springs. Chairman: John Cram, M.D., 575 - 5th Street, San Bernardino.

April 10-11—**WEST COAST COUNTIES**, in cooperation with Stanford School of Medicine. Del Monte Lodge, Pebble Beach. Chairman: William B. Wenner, M.D., 726 Cass Street, Monterey.

April 23-24—**NORTH COAST COUNTIES**, in cooperation with UCLA School of Medicine. Brooktrails, Willits. Chairman: Patrick R. Allanson, M.D., 728 South State Street, Ukiah.

May 7-8—**SAN JOAQUIN COUNTIES**, in cooperation with Loma Linda University School of Medicine, Ahwahnee Hotel, Yosemite. Chairman: Leo Goodman, M.D., 1341 Wishon Avenue, Fresno.

June 26-27—**SACRAMENTO VALLEY COUNTIES**, in cooperation with USC School of Medicine. Harvey's Wagon Wheel, Lake Tahoe. Chairman: William Tucker, M.D., 3560 "Jay" Street, Sacramento.

For information regarding Postgraduate Institutes and Circuit Courses, contact: Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 94102. PRospect 6-9400, Ext. 68.

\*Hours to be announced.





## THE PHYSICIAN'S *Bookshelf*

**THE STRESS OF LIFE**—Hans Selye, M.D. McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, N. Y., 1963. 324 pages, \$2.75 (Paperback).

In the preface, the author states that "The main purpose of this book is to tell in a generally understandable language what medicine has learned about stress." It is divided into five "books" or parts.

Part 1 deals with "The discovery of stress." The author discusses several definitions for the words "stress" and "discovery." He then has a section on witch doctors, evil spirits and incantations, on ponos (the toil of disease) and homeostasis (the staying power of the body). His "first glimpse of stress" occurred as a "young medical student." And this was followed by G. A. S., presumably an abbreviation for the general adaptation syndrome. There are several pages dealing with his difficulties in evolving a suitable terminology, ending with the decision that "le stress" could be used as a universal word . . . for example der Stress, lo stress, el stresse and o stress.

Part 2 is entitled "The dissection of stress." The author divides certain situations into local adaptation and general adaptation syndromes. This portion is marked "Intended only for those who are seriously interested in the nature of normal and morbid life." There are several diagrams of a hypothetical adrenal, hypophysis and intermediate neural and hormonal communication systems.

Part 3 deals with "The diseases of adaptation." The possible role of excessive or insufficient corticoid production in the development of various diseases, bacterial, viral, degenerative, neoplastic and otherwise, is extensively discussed. There is a special chapter headed "When scientists disagree" in which the author notes that in Ernest Jones' biography of Freud, the psychiatrist Walther Spielmeier had at first denounced the use of psychoanalysis as mental masturbation. "By 1910 the mere mention of Freud's theories was enough to start Prof. Wilhelm Weygandt, then Chairman of a medical congress in Hamburg, to banging his fist and shouting 'This is not a topic for discussion at a scientific meeting; it is a matter for the police.'"

Part 4 is entitled "Sketch for a unified theory." The author writes "This section is intended only for those who are keenly interested in the nature of normal and morbid life. Like Book 2 it is somewhat heavy . . ."

Part 5 is entitled "Implications and applications." "The most important applications of the stress concept as regards purely somatic medicine are derived from the discovery that the body can meet various aggressions with the same adaptive-defensive mechanisms. A dissection of this reaction teaches us how to combat disease by strengthening the body's own defenses against stress." "Any time during the day, in discussions, at work and at play, when I begin to feel keyed up, I consciously stop to analyze the situation. I ask myself: 'Is this really the best thing I could do now, and is it worth the trouble of putting up resistance against counterarguments, boredom, or fatigue?' If the answer is

no, I just stop; or whenever this cannot be done gracefully I simply "float" and let things go on as they will, with a minimum of active participation (e.g., during most committee meetings, solemn academic ceremonies, and unavailing interviews with crackpots)."

On page 304 the author notes "Another fascinating field for future research is the study of stress in relation to cancer. It is well known that a large variety of cancers do not grow well in animals or people subjected to severe stress."

By this time you may gather that the reviewer feels that the present work is not entirely a topic for scientific discussion; it is a matter for extensive revision and clarification. Since it is a paperback reprint of the 1956 edition, one may ask why such clarification hath not evolved ere this. Perhaps it has.

There is a glossary of terms and an index. The latter uses a remarkable "symbolic shorthand system" evolved by the author, who is a medical graduate from the distinguished German university of Prague, and currently director of the Institute of Experimental Medicine and Surgery at the University of Montreal.

L. H. GARLAND, M.D.

\* \* \*

**BONE CHANGES IN HEMATOLOGIC DISORDERS (Roentgen Aspects)**—A Mount Sinai Hospital Monograph —John E. Moseley, M.D., Associate Attending Radiologist, The Mount Sinai Hospital, New York, N. Y.; Director, Department of Radiology, Sydenham Hospital, New York, N. Y. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 261 pages, \$9.50.

This monograph is divided into eight sections, many of them excerpted from *The Journal of the Mount Sinai Hospital* in recent years.

Section 1 covers the bone changes seen in the following anemias: congenital aplastic anemia, iron deficiency anemia, erythroblastosis, spherocytosis, sickle cell disease and thalassemia.

The second section deals with "classic hemophilia" and Christmas Disease.

The third section deals with leukemia and myelocytosis with its host of polysyllabic identical siblings.

Then follow sections on osteopetrosis, multiple myeloma, the reticuloendothelioses and the malignant lymphomas.

Finally, there is an interesting section discussing the differences of opinion pertaining to differentiation of the reticuloendothelioses, and the more recent findings in the various forms of sickle cell disease.

Disorders of the hematological system are frequently difficult to elucidate; the differentiation of those in which roentgen changes occur in the bones will benefit from this work. This monograph can therefore be recommended as a handy reference work to clinicians concerned with the evaluation of bone changes secondary to blood disorders, especially radiologists, internists, pediatricians and orthopedists.

L. HENRY GARLAND, M.D.



**CLINICAL DISORDERS OF THE HEART BEAT**—Second Edition, thoroughly revised—Samuel Bellet, M.D., Professor of Clinical Cardiology, Graduate School of Medicine of the University of Pennsylvania; Director, Division of Cardiology, Philadelphia General Hospital; Director, Division of Cardiovascular Diseases, Graduate Hospital of the University of Pennsylvania, Philadelphia, Pa. Lea & Febiger, 600 S. Washington Square, Philadelphia 6, Pa., 1963. 1105 pages, \$28.00.

This previously well known monograph has been completely rewritten and expanded by more than 700 pages so that it is essentially an entirely new book. An 80-page review of the anatomy of the conduction system and cardiac physiology introduces the subject. Then follow 13 chapters of discussion of individual arrhythmias. Each chapter, although following the general format of the previous volume, has been enlarged and numerous additional illustrations have been prepared. In the review of the atrial arrhythmias, Prinzmetal's theories are discussed but the circus movement theory is not discarded. Cardiac arrhythmias occurring during special clinical situations such as cardiac catheterization and electrolyte disturbances are described. A thorough 160-page discussion of drug therapy is followed by an excellent review of recent developments in pacemakers and cardioversion containing timely references and many good illustrations. A well selected bibliography is arranged at the end of each chapter. Only a few minor criticisms may be made. Many illustrations are from the publications of other workers—48 out of the first 50 in the book—but most of the electrocardiograms are from the author's own collection. The section on the hemodynamics of cardiac arrhythmias is inadequate and does not present recent concepts of the function of atrial contraction, for example. Some of the illustrative tracings of pressure pulses and heart sounds in various cardiac arrhythmias are of little value. A more thorough review of special techniques available for the study of cardiac arrhythmias such as phonocardiography, jugular pulse tracings, esophageal and intracardiac leads would have been helpful although these techniques are briefly mentioned in the individual chapters. The section on ballistocardiography could have been omitted. These are minor deficiencies, however, and do not detract from what will be a standard reference book on cardiac arrhythmias for many years to come.

H. N. HULTGREN, M.D.

\* \* \*

**ATLAS OF VASCULAR SURGERY**—Falls B. Hershey, M.D., F.A.C.S., Associate Professor of Clinical Surgery, Washington University School of Medicine, St. Louis, Mo.; Area Consultant in Surgery, United States Veterans Administration, St. Louis, Mo.; Director, St. Louis Heart Association Artery Bank, 1954-1957; Diplomate, American Board of Surgery; and Carl H. Calman, M.D., F.A.C.S., Assistant in Clinical Surgery, Washington University School of Medicine, St. Louis, Mo.; Attending Surgeon, Veterans Administration Hospital, St. Louis, Mo.; Diplomate, American Board of Surgery. Illustrated by Kathryn Murphy and William R. Schwartz. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1963. 307 pages, \$18.00.

This is a basic atlas designed for the resident and practicing surgeon demonstrating the technical aspects of peripheral vascular surgery. The volume is nicely illustrated, concisely written, and attractively printed. There are several omissions, however, that detract from its value. Any reference to intra-thoracic vascular problems appears without the intended scope of the book, although neither the title nor preface makes this clear. There is no mention of dissecting aneurysms, and this disease has important peripheral vascular manifestations. Within the limits of the material it covers, the book should be helpful to the vascular surgeon, but it does not provide by any means an exhaustive or inclusive survey of the field.

NORMAN E. SHUMWAY, M.D.

**STRUCTURE AND DYNAMICS OF ORGANIZATIONS AND GROUPS**—Eric Berne, M.D., Lecturer in Group Therapy, Langley-Porter Neuropsychiatric Clinic; Visiting Lecturer in Group Therapy, Stanford Psychiatric Clinic; Adjunct Psychiatrist, Mount Zion Hospital, San Francisco; Director, San Francisco Social Psychiatry Seminars; Consultant in Group Therapy, McAuley Clinic, San Francisco; Editor, Transactional Analysis Bulletin; Formerly Consultant in Psychiatry to the Surgeon General, U.S. Army, and Attending Psychiatrist to the Veterans Administration Mental Hygiene Clinic, San Francisco; Diplomate of the American Board of Psychiatry and Neurology; Fellow of the American Psychiatric Association; Corresponding Member of the Indian Psychiatric Society. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1963. 260 pages, \$7.50.

These are days when more and more attention is being diverted to the interaction between the individual and his surrounding socio-cultural forces. Social system analyses of large cultural systems are complex and difficult to understand, thus it is refreshing and appropriate that Dr. Berne has chosen the small group as his touchstone for the examination of the individual vis a vis his culture.

Dr. Berne has divided his volume into three major divisions: (1) Part I, An Illustrative Analysis of a Group Meeting, (2) Part II, The Group as a Whole, and (3) Part III, The Individual in the Group.

Part I deals with the detailed social force analysis of the dynamics of a small group as illustrated by some interesting occurrences within a spiritualist meeting. The latter meeting was attended by Dr. Berne and a coworker and involved a deliberate attempt at group disruption and surprisingly, to all concerned, a police raid which ended the meeting. In this part of the book the author, in his systematic analysis of the spiritualist group, presents five aspects whereby most group problems and stresses can be analyzed or made more evident. The breakdown to enhance the analysis is as follows:

1. The public structure, represented by the seating diagram.
2. The group authority, represented by the authority diagrams.
3. The private structure, represented by the group images.
4. The group dynamics, represented by the dynamic diagrams.
5. The details of group process, represented by transactional diagrams.

In Part II, the author defines the group and indicates how within any group different mental pictures of the group exist in the minds of its individual constituents. Berne speaks of the methods by which the group maintains its "health" and describes forces that tend toward group destruction. Also in Part II, the author indicates that group structure is directly related to group health and goes on to state the greater the organization within the group the more the efficiency. It seems to me that here there is an implication of a positive correlation between "health" and efficiency. I take issue here as organizations can occur to the extent that it stifles and dampens individual creativity and expressiveness with consequent morale loss to the individual and thereby lessening group "health." Related to the latter statement is the discovery within the Human Relations Laboratory movement (essentially group dynamic experiences) that many organizations have great organizational efficiency but still feel the employee is not producing as freely as he might because of structural-organizational constraints. In other words, the tendency in industries has been emphasis on a productive-efficient group culture with less emphasis on the individual. There is now increasing recognition that



a swing back to the individual is necessary for more cultural or group "health."

The author continues in Part II to describe leadership, its types and qualities. He makes some interesting statements with historical anecdotes about the group's need for a leader.

In Part II there is a comprehensive description of the individual and how the group relates to him. The author attempts to relate the intra-personal to the inter-personal worlds. Inter-personal interactions are detailed and of special interest in Dr. Berne's chapter on the analysis of games. The last chapter in Part II deals with the description of some of the fundamental or basic individual needs and how much of these needs are denied or met by the group. In this chapter, entitled "The Adjustment of the Individual to the Group," the usual *modus vivendi* between the individual and the group is described in more or less basic need terms.

Dr. Berne in a fourth part of his book, which is something of an appendage and whose presence I'm not certain is necessary, discusses ailing groups, their diagnosis and possible approaches to correct their ills. One treat in this part of the book is a suggested reading section which gives an excellent historical review of social dynamics starting from the maxims of Ptah-Hotep in 3000 B.C. and coming up to the present. The last part of the book is a proposed classification for social aggregations and is one of the weaker sections.

The book is well written and is a most needed foray into the not well understood world of the group by a social scientist-psychiatrist (social psychiatrist). Dr. Berne's professional background enabled him to offer us keen insights into the often related and often divergent worlds of the intra- and inter-personal.

J. ALFRED CANNON, M.D.

\* \* \*

**DIAGNOSIS AND MANAGEMENT OF PAIN SYNDROMES**—Bernard E. Finneson, M.D., F.A.C.S., Neurosurgeon, The Episcopal Hospital, Philadelphia. Illustrations by Barbara R. Finneson. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 261 pages, \$8.50.

In "Diagnosis and Management of Pain Syndromes," Dr. Bernard Finneson has produced a pleasant, almost conversational survey of problems of pain as they are seen by a practicing neurosurgeon. The absence of all references to the literature takes from this tome any pretense of value as a scientific reference work. On the other hand, any clinician dealing with problems of pain may find the author's ideas refreshing, and at times stimulating. The book is aimed at the medical profession in clinical practice generally—certainly not chiefly at the specialist in nervous system disease, though it is stated, rightly, that "a number of the techniques described fall solely within the discipline of neurosurgery."

As is usual with works in medicine which eschew the scientific method, some inaccuracies or unfortunate implications creep in—usually for reasons not apparent. An example is "The use of any needle other than an 18-gauge lumbar puncture needle is ill advised" (for pantopaque myelography). These unestablished, unqualified comments, however, are not excessive.

Not the least attractive feature of the work is the liberal number of neat, lucid line drawings created by the author's talented wife. Rare indeed is the able medical artist who is willing to sacrifice the creation of an elaborate half-tone for the clarity of the simple sketch.

The library of the physician interested in problems of pain will be a more pleasant one if it contains this volume.

EDWIN B. BOLDREY, M.D.

**THE YEAR BOOK OF ENDOCRINOLOGY (1962-1963 Year Book Series)**—Edited by Gilbert S. Gordan, M.D., Ph.D., F.A.C.P., Professor of Medicine and Chief of Endocrine Clinics, Department of Medicine, University of California School of Medicine; Attending Physician, University of California Hospitals, San Francisco General Hospital, and Veterans Administration Hospital, San Francisco, Calif. Year Book Medical Publishers, Inc., 35 East Wacker Drive, Chicago 1, Ill., 1963. 411 pages, \$8.00.

This is another Year Book of the same high standards as previously. The literature in the fields of carbohydrate metabolism, adeno-hypophysis, neurosecretion, the thyroid and parathyroid glands, the adrenal cortex and the reproductive system is covered thoroughly. Pertinent comments by the author are spread throughout and add much to the value of this book. As a book for rapid reference to current literature and for general coverage of the field of endocrinology, it has much to recommend it.

JOHN S. LAWRENCE, M.D.

\* \* \*

**SPECIFICITY OF SEROLOGICAL REACTIONS—Revised Edition**—Karl Landsteiner, M.D. With a Chapter on Molecular Structure and Intermolecular Forces by Linus Pauling, and with a Bibliography of Dr. Landsteiner's Works; and a New Preface by Merrill W. Chase, The Rockefeller Institute. Dover Publications, Inc., 180 Varick Street, New York 14, N. Y., 1962. 330 pages, \$2.00. Paperback edition.

This is a re-publication of one of the landmarks in immunology and immuno-chemistry. It should be in the library of everyone interested in immunology. Few individuals could present the basic concepts of immunology in such a clear and concise way. Of particular value are the areas dealing with hypersensitivity to chemical allergens and the excellent discussion of "haptens" on which the author did pioneer work. There is much information in this book that will interest those well versed in the subject as well as those beginning work in this important field.

JOHN S. LAWRENCE, M.D.

\* \* \*

**HANDBOOK OF THE PRACTICE OF ANESTHESIA**—John R. S. Shields, M.B., Ch.B., F.F.A.R.C.S., Associate Professor of Anesthesiology, Department of Surgery, Washington University School of Medicine, St. Louis, Missouri. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo., 1963. 203 pages, illustrated, \$6.85.

The author states in the preface to his book that its purpose is to describe the best approach to various problems and the best methods of accomplishing the different techniques of modern anesthesia.

He devotes 16 pages to endotracheal intubation and 6 pages to venipuncture suggesting that the book is directed toward the medical student or perhaps the beginning resident in anesthesia.

The virtues of the book are the generally sound bits of advice given at the beginning of each chapter and the writing style that makes the book so easily readable.

The deficiency lies in the cook book technique used in describing the management of anesthesia for various operations. It would be hard to find anesthesiologists who would agree that moderate hypothermia or pulmonary resection in patients over the age of 45 are themselves an indication for digitalization or that the best method to accomplish hypotensive anesthesia is with one per cent Arfonad. The illustration of bronchography technique utilizing a Cobb connection with cap in place is found objectionable by this reviewer. Illustrations of the double ended oral airway and its use could better be substituted with illustrations of the technique of mouth-to-mouth resuscitation.

LEONARD F. WATTS, M.D.

## New Test Can Detect Early Kidney Cancer

(Continued from Page 33)

The development of the two enzyme tests was made possible by the recognition and elimination of substances that inhibit the activity of the enzymes in urine.

The normal range of alkaline phosphatase activity was determined in 38 healthy adults, the researchers reported. An elevated alkaline phosphatase activity was then found in 12 of 13 patients with proven cancer of the kidney, they said. LDH activities were also elevated in 12 of these 13 patients, they said.

Simultaneous elevation of LDH and alkaline phosphatase activities also were found in six patients with asymptomatic cancer of the kidney, they said.

## Infrared Photography Used In Medical Diagnosis

Photographs of the infrared radiation which naturally emanates from the human body are being used as an aid in the diagnosis of various diseases, such as cancer.

Infrared energy in the form of light invisible to the eye is emitted by every object with a temperature above absolute zero, R. Bowling Barnes, Ph.D., Stamford, Conn., and J. Gershon-Cohen, M.D., Philadelphia, said in describing the technique in the September 21 *Journal of the American Medical Association*.

Since the amount of infrared given off by the body depends on its temperature, they said, a picture taken by a special camera reveals the surface temperature of various parts of the body. The developed picture, or thermogram, is in various shades of gray, the lighter areas indicating the hot spots and the darker areas the cooler parts, they said.

Differences in skin temperature can then be determined by means of a standardized scale, they said.

Studies have shown that skin overlying concentrations of blood, such as in bruises, or over areas of inflammation or malignancy, is hotter than the surrounding skin, the authors said. Thus, the thermogram can be used as a harmless test for these conditions, they said.

Injuries also are clearly recorded by this method, not only those confined to the skin and soft tissue, but also those involving deeper structures such as bones and viscera, they said. Since the emission of infrared radiation is greatly influenced by changes in the supply of blood to the skin, they said, circulatory diseases have been studied through this technique and the results of vascular surgery have been recorded with "graphic clarity," they added.

The infrared camera can record up to 60,000 "bits of temperature information per full picture," the researchers said. Detail as small as one-eighth

of an inch can be obtained from a distance of 10 feet, they said.

The pictures require no external illumination or irradiation of the subject and are not influenced by skin color, they said. The picture can be taken in about 6 to 12 minutes and the print developed for viewing in 20 seconds, they said.

As in all biological tests, the authors stressed, data from all sources must be correlated to obtain a correct diagnosis.

Dr. Barnes is president of Barnes Engineering Company. Dr. Gershon-Cohen is director, department of radiology, Albert Einstein Medical Center, Northern Division.

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### Live Polio Vaccine Stabilized To Keep at Normal Temperature

Live poliovirus vaccine can be treated so that it retains its potency without the necessity of refrigerated storage, a study indicated today.

Because the attenuated virus is unstable like most viruses under ordinary temperatures, present regulations and practice in the United States require that the vaccine be stored and shipped frozen, and that after thawing it be kept under refrigeration and discarded if not used within seven days.

Recent findings have shown that polio and other

intestinal viruses are rendered stable in the presence of high concentrations of magnesium chloride, according to an article in the August 3 *Journal of the American Medical Association*.

Data obtained from feeding the oral polio vaccine to 458 children indicated that the vaccine diluted in magnesium chloride was as effective as ordinary vaccine in stimulating immunity, Joseph L. Melnick, Ph.D., Asaria Ashkenazi, M.D., Velia C. Midulla, M.D., and Craig Wallis, M.S., Houston, and Alan Bernstein, Ph.D., Marietta, Pa., reported.

Even when the stabilized vaccines had been stored under adverse conditions (21 days at about 85 degrees Fahrenheit), the response in children was equal to the response to ordinary vaccine that had been stored in the frozen state, they said.

The stabilized vaccine can be held at about 40 degrees Fahrenheit for well over a year with no loss in potency and there is no need to keep it refrigerated during its administration to large groups, they said.

"In mass immunization programs, particularly in underdeveloped and tropical countries where it is difficult to maintain or to ship the vaccine under frozen conditions, the stabilized vaccine offers advantages," the researchers said.

Vaccines stabilized in this way have been used

(Continued on Page 54)

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## REFERENCES AND REVIEWS

THYROIDAL  $I^{131}$  UPTAKE PATTERNS FOLLOWING IODIDES—  
J. T. Taguchi, C. P. Powell and N. F. Nickerson. Arch.  
Intern. Med., 112:569 (Oct.) 1963.

$I^{131}$  uptake patterns of 23 euthyroid patients were studied at varying intervals after administration of inorganic iodide. Eight of the 23 patients showed abnormalities in the 24-hour  $I^{131}$  uptake: three showed a "rebound phenomenon"; and five exhibited "prolonged suppression," one of which was for one year. Exogenous thyroid stimulating hormone temporarily reversed the suppression in two cases.

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MEDICAL DIAGNOSIS: PRESENT, PAST, AND FUTURE—R. L. Engle, Jr. and B. J. Davis. Arch. Intern. Med., 112:512 (Oct.) 1963.

After a review of several aspects of medical diagnosis it is concluded that computers will not solve the inherent diagnostic problems, but should be extremely useful as aids, provided physicians are educated to the capabilities and limitations of computers.

\* \* \*

THE ANALOG COMPUTER IN MEDICAL RESEARCH AND DIAGNOSIS—B. M. Taskett. Arch. Environ. Health, 7:303 (Sept.) 1963.

In recent years the use of electronic computers, both analog and digital, has increased many-fold in the medical and biological fields. The advantages of the analog computer include simple operation, low cost, and high speed—for simulation, in-vivo data processing, and analysis. The basic principles of analog techniques are described, along with a survey of many reported applications in cardiovascular physiology, neurophysiology, biochemical systems, and other related fields.

\* \* \*

PSYCHIATRIC HOME VISITS—J. C. Mickel. Arch. Gen. Psychiat., 9:379 (Oct.) 1963.

A survey of 266 psychiatrists in private practice revealed that 91 per cent of them had at some time made a home visit. In the past year, 44 per cent had made two or more visits and 6 per cent had averaged over two visits per month. Twenty San Francisco psychiatrists were interviewed about the reasons for which they had made home visits. The usual reason for seeing a new patient at home was the patient's severe disturbance and the referral source's request. The usual reason for seeing at home a patient in treatment was the sudden worsening of the patient's condition.

\* \* \*

FETAL PROGNOSIS AFTER ANESTHESIA DURING GESTATION—B. E. Smith. Anesth. Analg., 42:521 (Sept.-Oct.) 1963.

During a period in which 18,248 live births occurred, 67 women received anesthesia for surgery not related to delivery during the gestational period. The only maternal mortality was unavoidable and not related to anesthesia. No fetal anomalies were noted, but there were 9 abortions and stillbirths and one neonatal death. Factors of clinical anesthesia relating to maternal physiology, teratogenesis, and premature onset of labor are discussed.

\* \* \*

BLOOD VOLUME STUDIES OF NORMAL GERIATRIC SUBJECTS—C. L. Waltemath and T. T. Harkness. Anesth. Analg., 42:551 (Sept.-Oct.) 1963.

Blood volume was measured in men and women over the age of 60 years by means of  $Cr^{51}$ . The whole blood and red cell volumes had a low average and a wide range. The volumes did not correlate with the clinical status, hematocrit, or total serum proteins. The unreliability of hematocrit as indication of blood volume status is documented.

\* \* \*

POSTURAL CHANGES IN PLASMA VOLUME IN HYPOALBUMINEMIC SUBJECTS—S. Eisenberg. Arch., Intern. Med., 112:544 (Oct.) 1963.

Postural changes in blood volume were studied in hypoalbuminemic and normal subjects. Standing resulted in a 7 per cent decline in plasma volume in normal and a 17 per cent decline in hypoalbuminemic subjects. These changes were associated with commensurate increases in serum protein concentration and hematocrit. This exaggerated hypovolemic response is ascribed to disordered Starling's forces and is suggested as a stimulus for volume-sensing devices.

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Due to mild anticholinergic action, especially with higher dosage: Dry mouth, tachycardia, palpitation, urinary hesitancy or retention, blurred vision, dilation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, constipation and drowsiness. Mental confusion may appear in the elderly. Dosage reduction usually eliminates side effects. Use with caution in patients with tachycardia. Some patients may experience transient episodes of lightheadedness or dizziness following injections of Norflex (orphenadrine citrate).

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## Nicotine Toxicity Discussed in J.A.M.A.

There is considerable variation among individuals regarding the amount of nicotine that can be safely ingested, according to a consultant to the *Journal of the American Medical Association*.

Among popular brands of cigarettes, the nicotine content in the tobacco of one cigarette may vary from about 10 to 18 milligrams although within any one brand, the nicotine content remains quite constant, Paul S. Larson, Ph.D., Richmond, Va., wrote in the question-and-answer section of the August 17 *Journal of the American Medical Association*.

"Nicotine is readily absorbed through all mucous membranes except the stomach, which does not absorb nicotine because of the acidity of the stomach's contents," he said. "There is considerable individual variation in minimally toxic dosage, but oral ingestion of as little as two to five milligrams at one time may cause nausea. The oral lethal dose (ingested at one time) has been estimated to be 50 to 60 milligrams."

Common observation bears out the fact that nicotine is quite rapidly detoxified, since the two-pack-a-day smoker obtains what might be a fatal amount of nicotine if administered in a single dose, Dr. Larson said.

## Live Polio Vaccine Stabilized To Keep at Normal Temperature

(Continued from Page 40)

successfully to halt type 1 and type 3 polio outbreaks in Israel where they were fed to 300,000 children, they said. Such vaccines also have been given to 80,000 persons in Cumberland County, Md., with excellent results, they said.

Recently stabilized vaccines have been licensed in England and are used routinely there, they said. In Russia, they said, magnesium chloride is being incorporated into the production of all oral poliovirus vaccines.

The Houston study showed that of 96 children given ordinary type 1 vaccine, 78, or 81 per cent, developed immunity. The stabilized type 1 vaccine gave immunity to 60 of 74 children, or 82 per cent.

The ordinary type 2 vaccine provided immunity to 57 of 64 children, or 89 per cent, and the stabilized vaccine immunized 72 of 81 children, or 88 per cent.

In a comparison of ordinary vaccine combining the three types of poliovirus and stabilized trivalent vaccine, the researchers said there was no significant difference within a type in the response of children who had received one or the other.

The Houston researchers are affiliated with Baylor University College of Medicine. Dr. Bernstein is with Wyeth Laboratories.



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\*Scul, J. C.: Eye Ear Nose & Throat Month. 38:738 (Sept.) 1959.

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## Find Chronic Daydreamers Make Dreams Come True

Chronic daydreamers have a deep insight into their own personality and stand a good chance of making their dreams come true if they make use of this quality, a recent study indicates.

Psychologist Jerome L. Singer and his associates at the Institute of Psychological Research, Teachers College, Columbia University, New York City, studied daydreaming in hundreds of men and women of various ages and from various walks of life.

In general, the study showed that less than 1 person out of 10 never daydreams, according to an

article in the November *Today's Health* magazine, published by the American Medical Association.

Among the daydreamers, differences in personality were found between the frequent and infrequent daydreamers, the article said.

"The frequent daydreamer was found to have a higher degree of self-awareness, to be more acutely conscious of himself as a person, to have a deeper insight into his own personality," it said.

"Being better acquainted with his innermost urges and desires, he is better able to provide them with adequate means of expression. If he translates his greater self-awareness into action, he has a definite edge over others in achieving goals which will bring him the greatest self-satisfaction. But if he fails to supplement his insight with action, he will remain a frustrated dreamer, never able to achieve his real potential."

Frequent daydreamers were also found to have it over the others where creativity, resourcefulness, and capacity for original thinking are concerned, the article said.

Those who do not daydream very often are more contented with their lot than the others, have a greater ability to take misfortunes and setbacks in stride, and if they can't achieve their goals, they're more willing to compromise and make the best of the situation, it said.

"In short, it takes less to make them happy," the article said. "And they are far more willing to work hard for what they get."

The frequent daydreamers needed a great deal to make them happy, according to the article.

"They had a strong need for personal achievement," it said. "They set high goals—sometimes unrealistically high. They also had a strong need to 'keep up with the Jones,' to acquire material possessions and high social status associated with success and distinction, and to be liked and admired by others."

Unfortunately, the article said, the frequent daydreamer lacks the patience to plod along when the going is tough and the grade is steep.

"It simply goes against his grain to climb the ladder of success and achievement the hard way, laboring persistently rung by rung and step by step," it said. "He seeks an easier way. He looks for short cuts. And because he's ingenious and resourceful, he often finds them. But just as often he doesn't."

The frequent daydreamers tend to be nervous, sensitive, high-strung, and keenly perceptive while the non-daydreamers were much more calm, relaxed, methodical, and matter-of-fact, the study showed.

"Most people's daydreams tended to serve a useful purpose, and were attempts to explore the future through 'trial actions,'" the article said. "They were

(Continued on Page 18)

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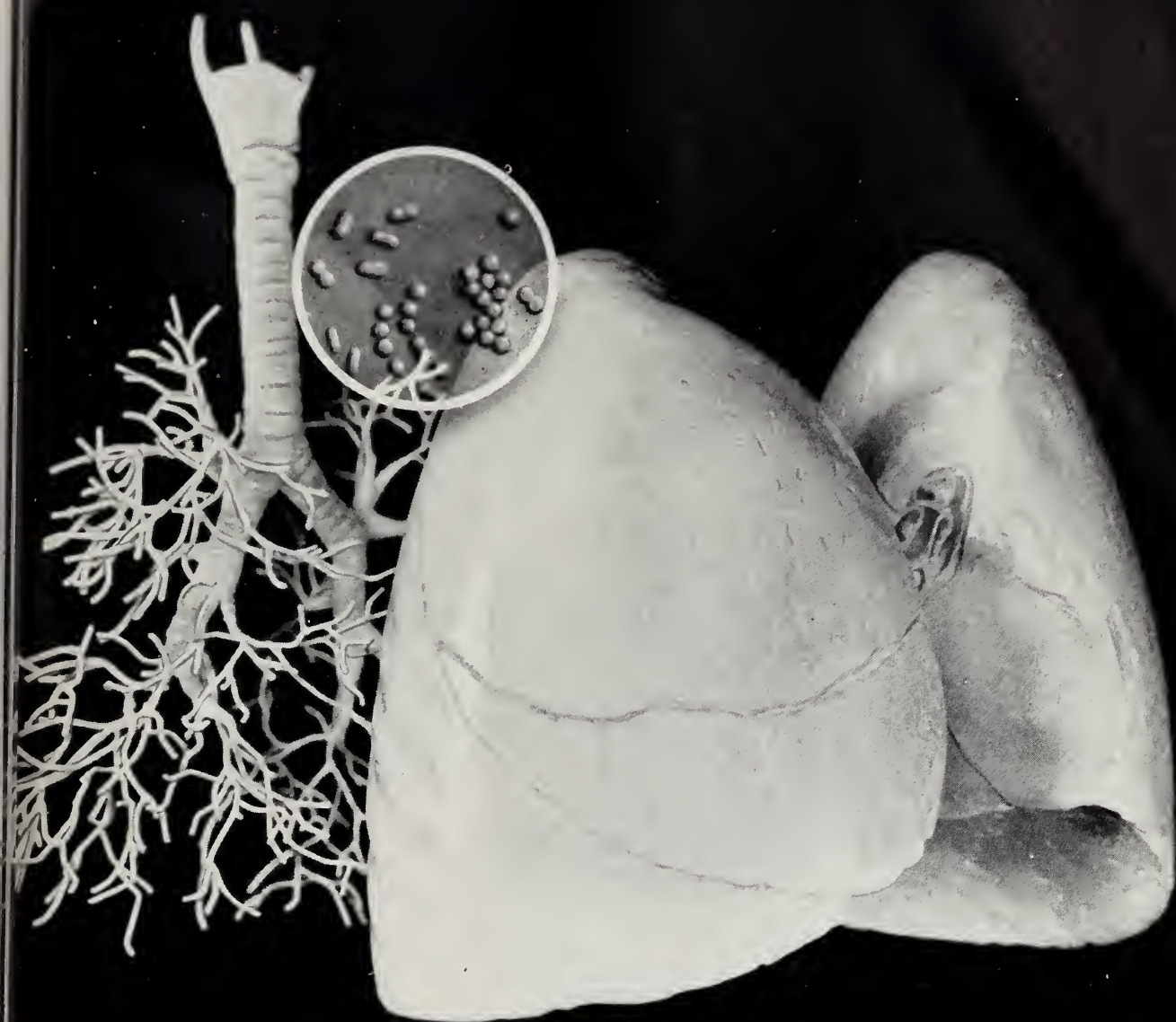
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## Bath in Polluted Water Abroad Infects U.S. Tourists

Four Americans contracted an infectious disease from bathing in polluted waters while abroad, Drs. Harry Most and Daniel I. Levine, New York City, reported.

The four cases of schistosomiasis, produced by worms which penetrate the skin and invade the blood vessels, were described in the November 2 *Journal of the American Medical Association*.

They said the cases were the first of their kind reported in American tourists.

Three of the victims were a 49-year-old physician, his wife, and a traveling companion who bathed in a fresh water pool during a Caribbean vacation, the authors said. The fourth case, a 29-year-old man, apparently contracted the disease in Egypt from bathing in water from canals or rivers.

The disease is contracted by persons washing clothes, bathing, wading, or working in contaminated water. Unsanitary sewage disposal is one of the important sources of these species of blood flukes in streams and rivers.

Schistosomiasis is distributed through the world and is believed to affect about 150 million persons, making it probably the most important parasitic disease affecting man.

The disease is not entirely unknown in this country, the two physicians wrote in the *Journal*. Several thousand persons in the armed forces became

infected in the Philippines during World War II and the disease has been encountered among some immigrants and a few persons who have lived or worked abroad, they said.

With increasing tourist travel, the disease may become more significant in this country, they said.

The Caribbean travelers became ill after returning to this country, the authors said. The initial symptoms were generalized aches, chills and fever, they said. The physician became acutely ill and was hospitalized, his wife was moderately ill for a few days and the third patient was only mildly ill, they said.

## Find Chronic Daydreamers Make Dreams Come True

(Continued from Page 12)

attempts to determine in advance the consequences of certain acts and situations."

People daydream about everything from romance to murder, according to the study.

"They dream in bathtubs, in elevators (quickies) and while driving to work . . . but most daydreams occur shortly before sleeping," the article said.

Other findings were that city people daydream more than country people and that a high percentage of daydreaming relates to love and romance.

Finally, it was shown that girls who daydreamed frequently tended to be extremely feminine, which was not true of girls who seldom daydreamed.

The article was written by John E. Gibson.



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## Infanticide by Starvation Modern-Day Tragedy

Five cases in which infants under nine months of age died of starvation as a result of prolonged neglect were reported in the November 2 *Journal of the American Medical Association*.

Dr. Lester Adelson, Cleveland, chief deputy coroner of Cuyahoga County, said:

"Infant homicide by starvation is an ugly and repugnant thought, but . . . [these] cases demonstrate that such tragic crimes do occur in a large metropolitan area with actively-functioning governmental and private welfare agencies, well-staffed hospitals and clinics, and all the apparatus necessary for preventing the occurrence of such horrible events."

Government and private welfare agencies are deeply concerned by mounting evidence which indicates that willful abuse, neglect, and general mistreatment of infants and small children are not rare occurrences, he said. Most reports are of repeated injuries, the so-called "battered child syndrome," he said. However, he said, depriving a child of adequate nutrition is equally, and probably more, dangerous to the child's welfare and is just as culpable under the law.

Investigation of these five cases disclosed long periods of willful neglect and callous disregard for the child's plight, coupled with unwillingness and failure to seek readily available medical attention, Dr. Adelson said. None of the children had been seen by a doctor or visiting nurse for at least three to four months prior to death, he said.

Three of the five infants, born out of wedlock, came from unkempt homes and had brothers or sisters in fair or poor condition, he said. However, the other two infants came from reasonably clean homes and had healthy, well-fed siblings, he said.

The singling out of a child for neglect in a home where there are several children has its counterpart with some "battered" children, he noted.

Maltreatment by starvation is more subtle and covert than other forms of physical abuse, Dr. Adelson said, and is more difficult to discover, diagnose, and rectify.

"The challenge in the case of the starved child is one of prevention," he said.

"It devolves upon the welfare agencies to search out instances of child neglect long before the situation has deteriorated to an irreparable state. Merely requesting that the mother bring the child to a clinic or hospital is obviously not adequate in some instances. Persistent follow-up and stubborn insistence are required if more such tragedies are to be averted. It is not sufficient to arrest, condemn, and punish the mothers after the child is dead."

In four of the cases indictments were returned against one or both parents, Dr. Adelson said. The mother of the fifth infant is awaiting action by the grand jury, he said.

## Effect of Nicotine on Heart Discussed in J.A.M.A.

The main effect of nicotine on the heart parallels that of physical exertion, causing a rise in the heart's output of blood and in coronary flow, Dr. William Dock, Brooklyn, N. Y., said.

In an editorial in the November 2 *Journal of the American Medical Association*, Dr. Bock said among a few sedentary men who have normal blood pressure and show no rise in blood pressure when smoking, a cigarette might possibly substitute for exercise, often praised as protection against hardening of the arteries.

On the other hand, he said, in a few men with severe coronary disease, the increase in cardiac work due to smoking is not accompanied by a rise in coronary flow and "real harm is done by smoking."

"Even in those in whom coronary disease is minimal, other actions of nicotine . . . probably outweigh the 'packaged exercise' effect and explain in part why men who smoke a pack a day die earlier than nonsmokers, and die more often from coronary disease," he said. "The relaxation due to smoking has a price."

Dr. Bock drew his conclusions from a study he reported in the October *A.M.A. Archives of Internal Medicine* in which the effect of smoking on the heart was traced by means of the ballistocardiogram, a device for measuring heart output.

Although previous studies indicated a correlation between coronary disease and abnormal heart beat patterns detected by this device, Dr. Bock said his study showed that the most commonly found abnormality was merely due to the relaxation of the patient when he begins to smoke.

His finding does not disprove the correlation between coronary disease and abnormalities uncovered by this smoking test, Dr. Dock said.

It is not latent heart disease but the type of individual predisposed to heart disease that is revealed by the ballistocardiogram, he said.

"In testing subjects, it is obvious that most men with this reaction are tense and restless when deprived of tobacco for an hour or more and are relaxed in mind as well as in muscle when they start to smoke," according to Dr. Dock. "Most of them are highly addicted and find it difficult or impossible to give up smoking. Any vascular damage which nicotine can cause will therefore be likely to occur in these subjects."

The only abnormal heart beat pattern produced by smoking which indicates organic heart disease was found almost exclusively in men with severe coronary disease, he added.

Dr. Dock is affiliated with the department of medicine, State University of New York Downstate Medical Center.

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References: 1. Callaway, N. O.: Article to be published. 2. Roddin, J. B., and Dawell, L. B.: *Amer. J. Gastroent.*, 37:24-40 (January) 1962.

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## Industrial Injuries Result From Mental Process

On-the-job injuries result from a psychological process, a study of some 300 industrial accidents indicated.

An analysis of case histories revealed certain patterns of behavior which preceded the mishaps, according to Drs. Alexander H. Hirschfeld and Robert C. Behan, Detroit.

In fact, they said, these patterns were so sharply defined it may be possible with further study to predict and, therefore, prevent such accidents.

Writing in the October 19 *Journal of the American Medical Association*, they said:

"Before the accident occurs there is a state of conflict and anxiety within the patient. As a result of this condition the worker finds a self-destructive, injury-producing act which causes his 'death' as a worker. From this moment the patient reacts as do other psychiatrically ill people, except for the character of his symptom. Instead of having a presenting complaint of anxiety, depression, or other classical psychiatric symptom, he has the physical disorder which is the result of his accident."

Describing typical behavior before accidents, the physicians said many skilled workers seem suddenly to do things which novices would not make the mistake of doing. Safety rules are often broken, they said, and several infractions frequently occur at the same time.

As an example, they said, workers were injured after repeatedly walking through well-recognized and marked danger areas without wearing protective helmets. When asked to explain this conduct, they said, the patients gave reasons that were "vague, or even silly, in every case."

"This behavior follows such a sharply defined pattern that we suspect statistical predictions will be possible with further study," they added.

Another pre-accident pattern uncovered by the study was a prediction of impending doom made by the worker himself, the authors said.

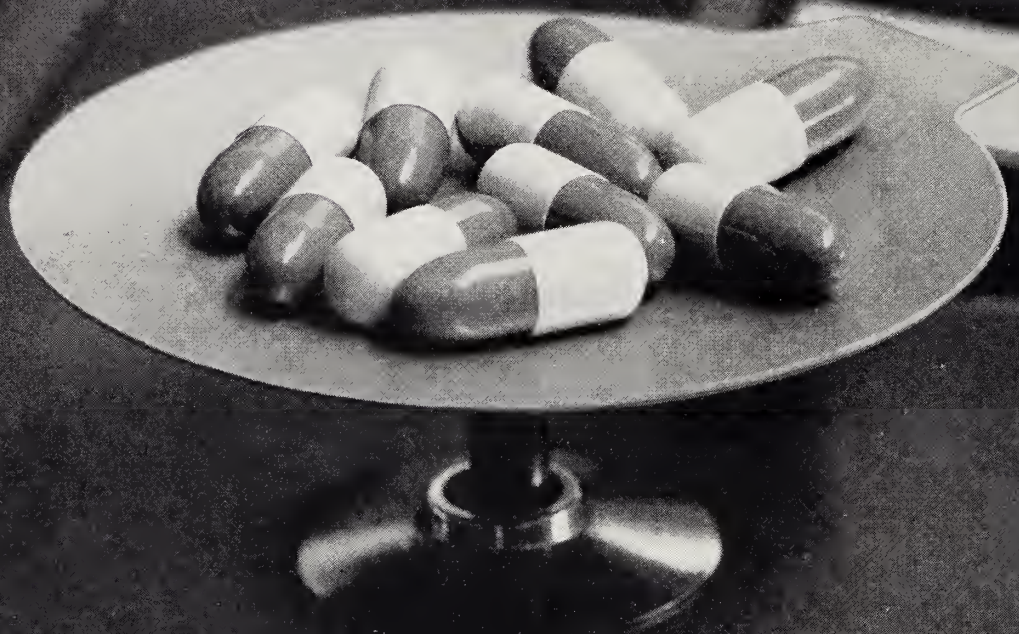
Such forebodings have been observed previously in Air Force medicine with the result that flight surgeons and supervisory personnel were instructed to withdraw flying privileges at such times, they said. Plant medical officers might possibly make similar use of workers' forebodings if by no other means than by watching for a sudden increased frequency of sick calls, they said. This concept is now under study, they said.

These cases indicate that something threatening happens inside of a worker and he seeks pain or injury as a solution, the researchers said. Since this foreboding is unacceptable to him he blames the impending danger on his machine or on other parts of his environment, they said.

The presence of his unexplained danger is frustrating and frightening enough that the patient soon

(Continued on Page 42)





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# California M E D I C I N E

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## Institutionally Acquired Infections

### A Resume

HAROLD J. SIMON, M.D., Ph.D., Palo Alto

THE THIRD National Conference on Institutionally Acquired Infections was held at the University of Minnesota in Minneapolis under the auspices of the University of Minnesota School of Public Health, the Communicable Disease Center, and the Division of Hospital and Medical Facilities of the United States Public Health Service. The three day symposium from September 4 through September 6, 1963, concerned itself with environmental, laboratory, epidemiological, legal and surveillance aspects of infection control in hospitals.

A complete summary of the Proceedings of the Conference will be published in the near future under the auspices of the Communicable Disease Center. This publication will form the latest addition to the set of previously published documents emanating from the conferences held in 1958 and 1961.

The primary purpose of this abbreviated resume is to call attention to several aspects of infection control which have received renewed emphasis by national and international events occurring in the recent past. These aspects are deemed of interest and importance to physicians in hospital and

private practice, to hospital administrations, and to the governing bodies of state and county medical societies.

#### SOME MAJOR PROBLEMS AND SUGGESTED SOLUTIONS

Although *staphylococcal infections* are generally deemed the most common and most important institutional problems, recent developments in the fields of environmental hygiene, newer antimicrobials, specific measures designed to reduce or eliminate staphylococcal colonization of newborn infants, greater general awareness and acceptance of the problem, and more precise information concerning nosocomial infections have served to lessen somewhat the hazard of staphylococcal infections while at the same time emphasizing the need for attention to other nosocomial infection problems.

*Gram-negative bacillary infections* are very much on the increase in both incidence and severity. Elderly, debilitated patients, those requiring catheterization of the urinary bladder, and those hospitalized with malignant diseases requiring treatment with immunosuppressive drugs are particularly at risk from this severe complication. It has been shown, for example, that between 6 and 30 per cent of all hospitalized female patients have bacteriuria. In 45 per cent of these instances, bac-

From the Department of Medicine, Division of Infectious Diseases, Stanford University School of Medicine, Palo Alto 94304.

Prepared at the request of the Executive Committee of the Scientific Board.



teruria can be traced back to a previous instrumentation of the urinary tract. Moreover, whereas a single attempt at catheterization carries a 2 per cent risk of infection, an indwelling Foley catheter carries a 98 per cent risk of infection. The routes of infection are manifold and include carriage of bacteria from the anterior urethra into the bladder, countercurrent travel of bacteria from contaminated collecting bottles—especially if there are air bubbles to serve as vehicles, travel of bacteria along the mucous sheath surrounding an indwelling catheter, and from the use of contaminated equipment.

Prophylactic antimicrobial therapy has been shown to be worse than useless. Infection is not prevented; only the nature of the infecting microorganisms is altered in the direction of antimicrobial resistance. The simple technique of closed drainage and irrigation can reduce the risk of infection from an indwelling catheter from almost 100 per cent to approximately 10 per cent.

Of great interest is the fact that irrigation of a 3-way closed catheter system with either polymyxin-neomycin or chlorhexidine solutions has reduced the infection risk to essentially 0 per cent, whereas the use of other antibiotics alone or in combination has failed significantly to alter the risk of infection. Thus, the use of a closed system employing a three-lumen catheter and the use of specifically chosen antibacterial agents can definitely minimize this great hazard and significantly reduce the potentially severe, long range consequences of urinary tract sepsis.

**Smallpox:** Of the greatest importance to populous California with its two ports of entry from overseas is the increasing hazard of communicable disease importation from abroad. It has been amply documented that the recent smallpox outbreaks in Western Europe were spread first to members of the hospital community (physicians and nurses), to other patients, and thence into the community at large. Moreover, the mortality rates among physicians and nurses were very high, higher indeed than the mortality rates among the remainder of the community.

Accidental importation of smallpox may occur at any time. The screen at the borders is dependent, at least in part, on the validity of the certificates held by incoming travelers. Moreover, the great rarity of smallpox in Western Europe and the United States in recent decades has served to lower the index of suspicion on the part of physicians so that an early case can easily be missed or misdiagnosed.

Compulsory vaccination is not yet widely practiced, at least in Great Britain. In the United States, on the other hand, compulsory vaccination

has been widely practiced for many years. Nevertheless, a recent survey made at a large hospital in the South indicated that over 60 per cent of doctors and nurses either never were vaccinated or had been vaccinated more than 15 years prior to the survey. It may therefore be taken for granted that the level of immunity present in the general population at the present time is considerably less than generally supposed.

*A recommendation has been made, on the basis of these experiences and findings, to the effect that all hospital employees and physicians be vaccinated with potent vaccines every three years, and that all vaccinations be carefully evaluated to make certain that successful takes are induced.*

Other institutionally required viral infections include the well-recognized exanthemata of childhood, herpes simplex infections of nurses and patients, the usual respiratory and enteroviral infections, and hepatitis. It was stressed that serum hepatitis is primarily a hospital-acquired disease, and that syringes, needles, blood and blood products were the greatest offenders. Even one unit of blood carries a greater than 1 per cent risk of hepatitis for the recipient. Consequently, the one unit transfusion practice was once again condemned. In addition, a strong plea was made for great care in the use of blood and blood products, and for the use of disposable equipment whenever possible.

#### INFECTION CONTROL AND SURVEILLANCE

Infection control requires complete coordination at several levels throughout the hospital and community. In the hospital the diet facilities, sterile supply facilities, laundry, housekeeping, and diagnostic facilities must be integrated with the clinical services, operating rooms, delivery suites, and laboratory facilities to provide complete, hospital-wide coverage from the infection control point of view. This coordination can best be achieved through a well-organized, well-run infection control committee which is charged with and has the power to enforce principles of infection control. Generally, some one member of the committee is designated the hospital epidemiologist to supervise the control program directly or through appropriate delegates.

Vitally important to the success of this program is an ongoing, well organized and well run in-service training program. Such a program is the responsibility of the hospital administration. The administration can run the program through the nursing service, but the program should clearly include training and education for all hospital personnel—employees and staff—in the matters of infection control particularly relevant to their areas

of work. It was suggested that the epidemiologist avail himself of the services of a nurse, called an *infection control nurse*, whose primary tasks would be case finding, supervision of isolation practices, aiding the in-service training program, facilitating reporting of problems to the committee, and trouble shooting when necessary. Such an individual might perhaps best be trained by the epidemiologist on the spot in matters appropriate to a particular hospital, or she might receive some epidemiological training through one of the state or federal agencies. Since her job will bring her into contact with all varieties of professional and employed personnel, the infection control nurse must possess exceptional degrees of tact, teaching ability, and tolerance for others interlaced with a significant quantity of fortitude.

Admittedly, surveillance and reporting of actual or potential problems in infection control constitute the weakest parts of any program. A great many devices for better surveillance and reporting were discussed and will be summarized in the Proceedings. Aside from the great value of an infection control nurse in this regard, one other device is worthy of mention at this point.

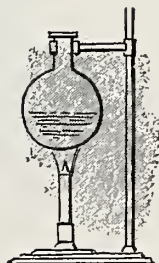
At least one county medical society in New York State has taken the problem of reporting and surveillance under its own roof. Each hospital in the area selected a hospital epidemiologist from the ranks of its professional staff. This physician works with the hospital administrator, the professional staff, the nursing service, and the other services to detect, report, and control all instances of infection in the hospital. Moreover, a problem appearing at one hospital is communicated to the county medical society where it is collated with the reports from other hospitals. In this fashion a problem can be pinpointed to one area, or can be seen to

involve other hospitals—perhaps even the entire region. Joint meetings are then held in an effort to pinpoint the source of the problem, and area-wide measures of control are developed.

This device not only serves to detect the nature and scope of infection control problems, but also serves to improve the quality of infection control in a particular region. Moreover, such a plan facilitates the reporting of communicable diseases to the county and state public health departments, thereby improving the reliability and validity of epidemiological information available to the community at large. If and when desired, this closer liaison between the members of the county medical society and the county and state public health agencies should further the rapport existing between them, dispel the distrust which sometimes exists in the area of infection reporting and control, and may be used by the county medical society or a hospital to draw on these agencies for help in times of need. Such calls for aid, now rarely made, would serve the interests of patients, physicians and hospitals as well as the intellectual and practical interests of state and county public health officials.

Finally, it was stated that state and federal agencies are vitally interested in the overall problems of institutionally acquired infections and stand ready to aid and advise in the planning of control programs, new construction, and training programs. Such aid may be rendered directly through the state organization or indirectly through the Communicable Disease Center's Bureau of State Services. Since nosocomial infection is now recognized to be a universal problem, it is perhaps appropriate to attack this problem at other than the purely local levels.

Stanford Medical Center, 300 Pasteur Drive, Palo Alto, California 94304.





# Method of Percutaneous Endotracheal Catheterization

JOHN H. MEHNERT, M.D., MAURICE J. BROWN, M.D., and  
BENJAMIN WOODWARD, M.D., San Diego

INTERMITTENT positive pressure aerosol therapy, widely used as a postoperative adjunct, offers considerable protection against the development of broncho-pulmonary complications. The treatments expand the pulmonary parenchyma and help loosen retained mucopurulent plugs, but since the secretions must still be expelled from the respiratory tree, an effective cough is necessary. Certain patients are reluctant to cough well, because of pain or temperament, and even liquefied materials may continue to accumulate. We use a simple technique that promotes expulsion.

## METHOD

Direct tracheal irritation brings about strong involuntary reflex coughing needed to expel endobronchial accumulations. Our method does this without the unpleasant side effects of nasal or oral catheterization. Other investigators<sup>1,2,3</sup> have reported passing segments of plastic tubing into the trachea through a separate puncture needle. We use the Bardic Deseret Intracath\* intravenous catheter placement unit because of its suitability and wide availability in an immediately usable sterile packet. The 1514-19 model series has proven most efficient and the largest size, model 1514, equipped with a fourteen gauge needle and an eight inch length of plastic tubing, is best adapted to the present use.

The catheter is introduced into the trachea as follows: At the site to be punctured—overlying the trachea and approximately four centimeters above the suprasternal notch—the skin is infiltrated with a local anesthetic agent. The fingers of the left hand straddled the larynx and adjacent trachea, immobilizing them and locating the anterior tracheal surface. With the right hand the Bardic Deseret needle is inserted and, tilted slightly toward the thorax, is advanced into the soft tissue of the neck (Figure 1). We make no special effort to enter the trachea at the level of the crico-thyroid membrane. A sensation of resistance, followed by a sudden "give,"

- The accumulation of tracheal secretions is frequently due to the reluctance of a postoperative patient in severe pain to aggravate the pain by coughing.

The intermittent instillation of a saponifying agent through an indwelling catheter inserted percutaneously has proved to be effective in clearing pulmonary secretions by producing a strong reflex cough.

Complications with this technique were few. It is not painful and can be done quickly and easily.

The Bardic Deseret Intracath unit, although devised for intravenous infusion therapy, is admirably suited to this technique.

signals the entrance of the needle into the trachea. The plastic tubing is then passed through the needle and down the trachea. It should slide forward without resistance and its entrance into the trachea should cause coughing. If it does not advance easily, it is probable the trachea has not been properly entered and the needle must be repositioned for a new attempt. After the tubing has been advanced into the trachea, the needle is withdrawn, and the base of the tubing is seated into the hub of the needle.

Unless the patient is anesthetized, introduction of the tubing is frequently accompanied by severe coughing, which can be controlled if need be by

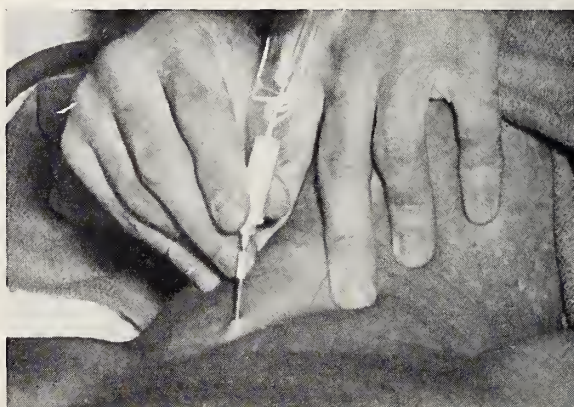


Figure 1.—A Bardic Intracath needle is being inserted into the trachea. The slight inclination of the needle toward the thorax will encourage a distal progression of the catheter.

Presented before a meeting of the Southern California Chapter of the American College of Surgeons, Coronado, California, January 19, 1963.

Submitted May 2, 1963.

\*Manufactured in U.S.A. for C. R. Bard, Inc., Murray Hill, New Jersey.

introducing a topical anesthetic agent through the tube. Within minutes after it is placed, the tubing warms, conforms to the tracheal configuration and becomes nonirritating.

A vigorous cough can be produced at will by introducing an irritant into the trachea through the indwelling catheter. We use Alevaire® (an aqueous solution of tyloxapol) for the purpose since it acts as a saponifying agent and is non-toxic. A bronchodilating agent, antibiotic or any other compatible substance may be added to the Alevaire. One milliliter of liquid instilled into the trachea every two hours is well tolerated, but often strong cough can be brought about with less than 0.5 ml.

Most recently a routine has been developed which combines the tracheal instillation with positive pressure therapy. Immediately following the usual aerosol treatment, the tracheal instillations are given to stimulate cough when it can be most effective. For prophylaxis, this regimen is usually carried out four times a day.

Although our technique was independently conceived, similar procedures have been reported by Radigan<sup>2</sup>, Webb<sup>3</sup>, and McCabe<sup>1</sup>. Webb has been using an experimental mucolytic agent, acetylcysteine, which he reports more effective than the agents in general use.

#### RESULTS

Fifty-five patients were treated postoperatively by the method described. In 38 the intent was prophylactic, the patients having been selected because of factors which were deemed to predispose them to a respiratory complication—age, history of previous pulmonary disease, heavy smoking habit or the nature of the operation. The needle was inserted at the completion of the operation, while the patient was still anesthetized. Alevaire instillations usually were begun as soon as the patient had fully recovered from the anesthetic. The frequency of the instillations varied from four times a day to as often as every two hours and extended over a period of from two to eight days, depending upon the clinical progress of the patient. In no case was anything else needed to keep the bronchial tree clear. Fever developed on the sixth postoperative day in one of patients being treated in this manner, and a roentgenogram was interpreted as showing middle lobe pneumonia. Clinically, however, fever was the only symptom. The treatment was not discontinued but an oral tetracycline was added to the regimen and the pneumonic process, as visualized radiographically, subsided in three days.

In 17 cases the method was employed because of forthright indication of need—accumulating endobronchial secretions or clinical or radiographic evidence of pulmonary atelectasis or inflammation.

In each instance, a vigorous effective cough was produced and the respiratory tract promptly cleared. We believe that tracheostomy was averted in some of these patients.

#### COMPLICATIONS

There were practically no complications. Considering the intricacy and vascularity of the paratracheal tissues, we anticipated occasional troublesome bleeding or hematoma following insertion of the needle, but neither occurred. We also were concerned with the possibility of infection about the tube tract, which would entail a threat of mediastinitis; but there were only four instances of infection and in all cases it developed in the fistulous tract during prolonged treatment. It remained well localized, suppurated little and subsided promptly.

The only significant complication occurred when a catheter spontaneously retracted into the paratracheal soft tissues and two instillations of Alevaire, 1 ml each, were made into the tissues of the neck. This caused transient pain, but no sequelae. We have since been careful that the catheter is firmly fixed to the skin at the puncture site.

Recognizing that the tip could be lost into the neck or trachea if the catheter should be accidentally transected with the sharp bevel of the needle, we bind the point of junction of needle and tubing with tape to prevent such a mishap.

#### CONTRAINDICATIONS

The therapy here described is useless of course for patients so debilitated that effective cough is beyond reasonable expectation. Relative contraindications are situations in which the catheter would pass through an operative area, opening a tract for possible contamination, or an area in which an existing pathologic state would be intensified.

McCabe<sup>1</sup> said that the use of this method is contraindicated in asthmatic persons, but we have used it successfully in patients with severe asthma. For a time, indeed, the technique was tried as a form of medical treatment for severe asthma and emphysema in the hope of removing obstructing mucus. The routine was soon abandoned because of the short duration of beneficial results.

2001 Fourth Avenue, San Diego, California 92101 (Mehnert).

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# The Effects of Spinal Anesthesia On the Fetal Heart Rate

HOWARD S. DOWNS, M.D., and PHILIP H. MORRISON, M.D., Los Angeles

THE PURPOSE of the present day study is to learn what effect spinal anesthesia has on the fetal heart rate as recorded by the fetal electrocardiogram, and what aspect of the anesthesia is responsible for the effect. It is to be noted that the fetal electrocardiogram is being used more and more widely as an indication of the intra-uterine condition of the fetus. Until about 1952 the fetal heart rate was the primary guide to an abnormal fetal physiologic condition. A slow, fast or irregular heart rate, especially during the period of labor, was the principal indication of the condition of the fetus. Management of labor was based largely upon these observations.

During the past decade thousands of case studies have broadened and refined the usefulness of the fetal electrocardiogram. One recent report<sup>9</sup> alone is based on 4,500 fetal electrocardiogram studies. The technique has been helpful in early diagnosis of pregnancy, presentation, multiple pregnancy, death-in-utero and conditions such as Rh incompatibilities, toxemia, ante-partum bleeding, heart disease and metabolic diseases such as diabetes and thyroid dysfunction.

## TECHNIQUE

Customarily, monitoring of the fetal heart is done with a fetal stethoscope applied intermittently upon the abdominal wall. Obviously this technique misses events occurring during the non-monitored periods. Attempts to monitor continuously with microphones strapped to the abdominal wall have not been very successful, due to the large amount of noise introduced from patient movement and other causes. Therefore, attempts were made to electrically monitor the fetal heart rate by use of electrocardiogram electrodes applied to the abdomen. Four sources of "noise" which proved troublesome in recording were: apparatus noise, environmental noise, skin-electrode junction noise, and patient motion noise.

Presented before the Section on Anesthesiology at the 92nd Annual Session of the California Medical Association, Los Angeles, March 23 to 27, 1963.

Clinical Professor of Anesthesiology, Loma Linda University, School of Medicine, Los Angeles 90033.

Resident in Anesthesiology, Loma Linda University, School of Medicine, Los Angeles 90033.

• The effect of spinal anesthesia on fetal heart rate is due to maternal hypotension and subsequent fetal hypoxia. Maternal hypotension of 80 mm of mercury for five minutes almost always results in hypoxic fetal bradycardia. This bradycardia is gradual in onset, and may be preceded by a short period of fetal tachycardia. There is a lag in the return of fetal heart rate to normal after maternal blood pressure has normalized. Similar bradycardia has been observed in maternal syncope unassociated with anesthesia. Maternal hypotension should be prevented, and if it occurs should be corrected early. Administration of a vasopressor drug is the treatment of choice, with oxygen and fluids as indicated.

Figure 1 shows three types of electrodes in diagrammatic fashion. It is to be noted that potentials from the abdomen are in the order of 5 to 25 microvolts. However, noise is in the order of 5 microvolts. Hence important data is submerged in worthless random noise. As was previously mentioned, a portion of the offending noise results from motion at the skin-electrode junction. The vaginal electrode shown in Figure 2 is better for its leads are not enclosed in plastic and it is freer to move with the patient. Vaginal electrodes permit pickup of fetal QRS amplitudes of 50 to 150 microvolts—a tremendous gain in signal strength.

As might be expected, signals from all these electrodes contain impulses from the maternal as well as from the fetal heart. In this application maternal electrocardiograms are unwanted and constitute electrical noise. As might be further expected with the use of vaginal electrodes applied to the presenting part, the signal from the maternal heart is of relatively low amplitude as compared with that from the fetal heart. Attenuation of noise is possible with suitably designed filter and amplifier circuitry, but with some loss of signal. Figure 3 shows a two channel recording of a filtered and unfiltered signal. The baseline of the filtered tracing is much "cleaner." The tracing is suitable for feeding into a cardiometer and permits an accurate "beat-to-beat" neon display of the fetal heart rate. Multi-channel recording permits this value to be recorded

along with maternal blood pressure and uterine pressure studies.

Techniques are currently being developed in our hospital for averaging correlated signals occurring in random noise. The result is a linear summation of the correlated signal and a quadratic summation of the uncorrelated noise. The end result is a dramatic improvement in signal-to-noise ratio. The present study, however, employs the fetal electrocardiogram as a method of obtaining an accurate "beat-to-beat" evaluation of the fetal heart rate.

# DISCUSSION

Ebner, Barcohen and Bartoshuk<sup>2</sup> concluded from their study that maternal hypotension is responsible for fetal bradycardia in spinal anesthesia. They found that the incidence of bradycardia was proportional to the severity and duration of maternal hypotension. A systolic pressure of 60 mm of mercury for four minutes resulted in fetal bradycardia. If normal tensions were restored within that time, fetal bradycardia did not occur.

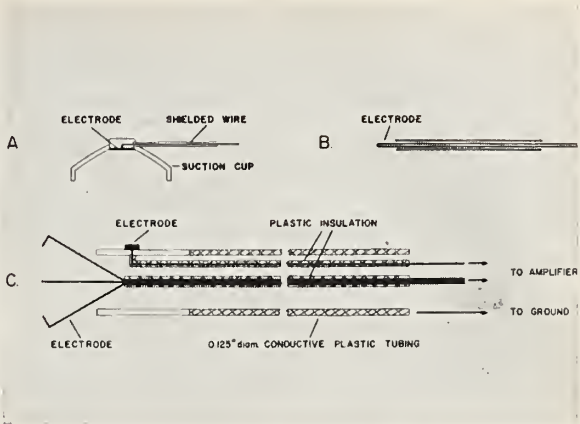


Figure 1.—Diagrams of three types of electrocardiogram electrodes used for constant monitoring of fetal heart rate. A, section cup type; B, needle type; C, vaginal type with its leads enclosed in a 1/8 inch diameter plastic tube.

When maternal systolic pressure did not drop below 70 mm of mercury, fetal bradycardia was unlikely. Hingson and Hellman<sup>4</sup> said that fetal brady-

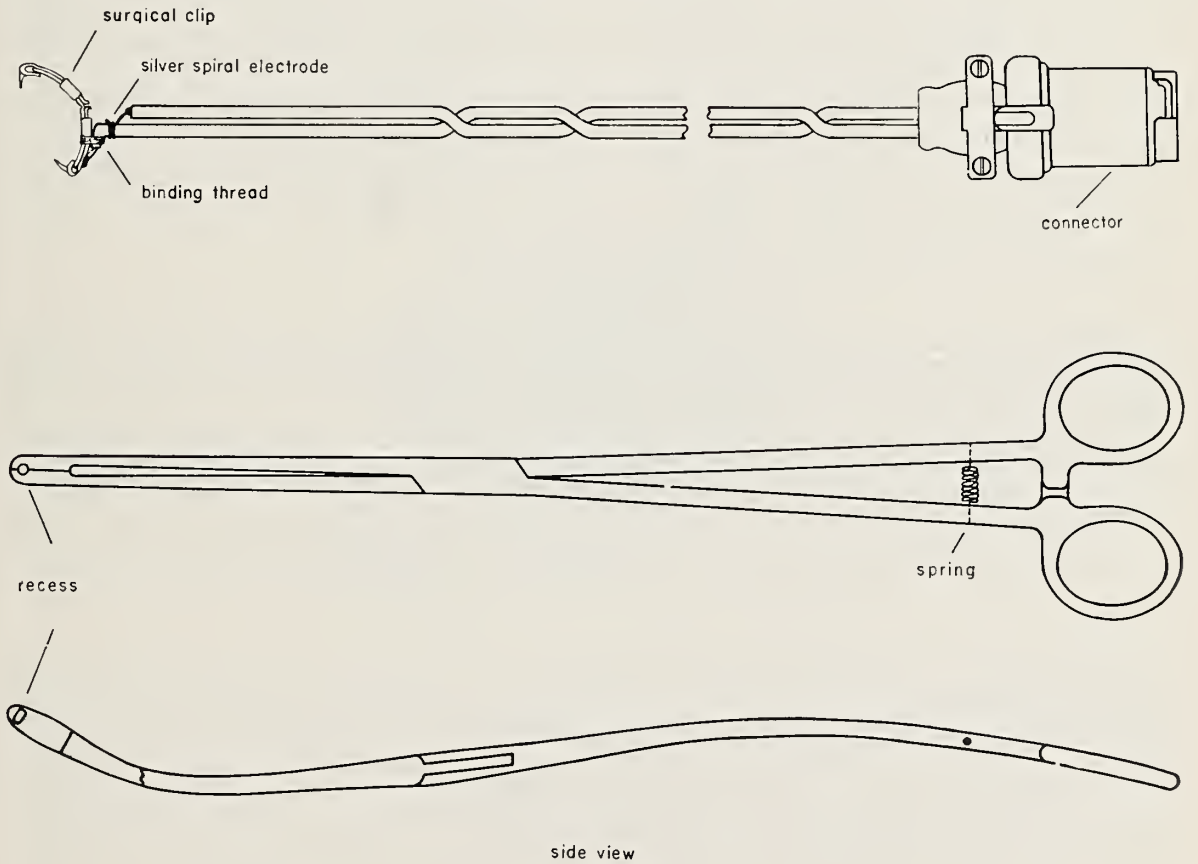


Figure 2.—Vaginal electrode and instrument for placing on presenting part.



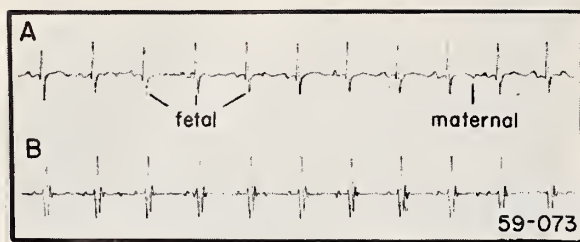


Figure 3.—A two-channel recording of fetal and maternal heart signals: A is unfiltered, and B is filtered.

cardia invariably developed within five minutes after maternal systolic pressure had fallen below 80 mm of mercury.

Wylie<sup>10</sup> expressed belief that maternal hypotension may lead to rapid fetal death. He wrote that maternal hypotension of 80 mm or below for five minutes would lead to fetal hypoxia.

Dance and Ward<sup>1</sup> stated that hypotension in the mother is a constant threat and may cause hypoxia in the fetus.

After an extensive study of fetal bradycardia in 1959, Hon<sup>5,6</sup> made several conclusions, among which are the following four:

1. Adequate intervillous space blood flow and oxygenation are probably related to a normal differential between intramyometrial and maternal blood pressure, as well as sufficient relaxation between uterine contractions. This fact is of definite clinical importance in a patient receiving an oxytocic agent<sup>3</sup> for the induction of labor. Excessively rapid administration of the agent, leading

to three 60 to 80 second contractions in 6 to 7 minutes resulted in fetal tachycardia preceding and following an episode of fetal bradycardia. During this period of uterine hypertonicity the intervillous space may be physiologically isolated and lead to a depletion of fetal oxygen reserve. When maternal hypotension is an additional complicating factor, as may occur with conduction anesthesia, serious fetal hypoxia can result.

2. The electrocardiographic pattern of fetal bradycardia noted with strong uterine contractions is similar to that seen with maternal hypotension. There is a U-shaped pattern, as may be seen in Figure 4. Increasing fetal hypoxia is indicated by a progressively longer, and more irregular U pattern.

3. Fetal bradycardia associated with umbilical cord compression is probably due to vagotonia. Hon and co-workers<sup>7</sup> also reported observing, in 31 mothers to whom they gave atropine, a decided change in the fetal heart rate pattern of bradycardia due to cord compression at delivery. (See Figure 5.)

4. The first indication of mild fetal hypoxia may be a sustained fetal tachycardia. This is not cause for immediate delivery. Three cases of sustained fetal tachycardia during maternal hypothermia were observed without apparent injury to the fetus. Hypoxic bradycardia is due to the hypoxic fetal myocardial depression, and begins near the end of a contraction. A similar pattern has also been observed in maternal syncope unrelated to anesthesia.

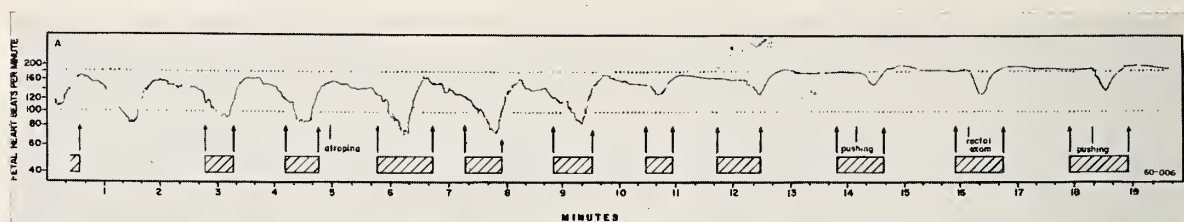


Figure 4.—Ordinate showing fetal heart rate in beats per minute and shaded areas showing period of contraction of uterus. Note the U-shaped curve which began and ended within the duration of the contraction. Contrast with Figure 5.

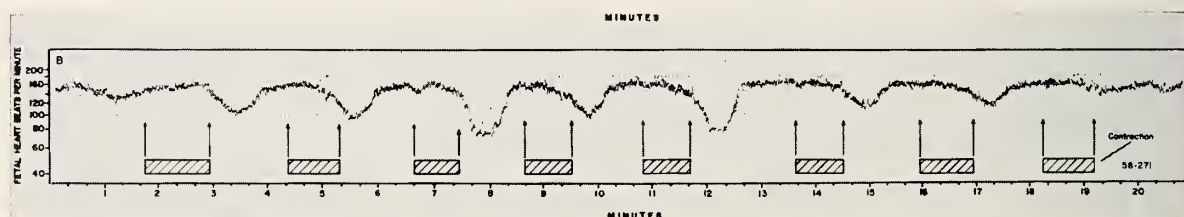


Figure 5.—The U-shaped curve of vagotonia developing late in contraction and extending well into the resting period of uterine relaxation. Contrast with Figure 4.

#### PRESENT STUDY

A search was made of 65 anesthetic records of mothers having fetal electrocardiographic studies during delivery under spinal anesthesia. It was not felt necessary to report on varying doses of *Pontocaine*<sup>®</sup>, given by residents, in this preliminary study. Although twelve of the 65 records showed a blood pressure drop to 80 mm of mercury or below, no fetal heart rate abnormalities occurred in any of these cases, indicating prompt and efficient correction of maternal hypotension.

#### TREATMENT

The treatment of fetal bradycardia following spinal anesthesia is essentially the treatment of maternal hypotension. Accurate and frequent determination of blood pressure is essential. Apparatus for automatic, periodic checking of maternal blood pressure is now available. The use of a vasopressor drug is probably of first importance in treatment. One hundred per cent oxygen is of value, but has less effect in returning the maternal blood pressure to normal than does a pressor agent. Ephedrine sulfate is at present thought to be the drug of choice. Methoxamine hydrochloride is thought to cause constriction of placental tissue and to ag-

gravate fetal hypoxia. Selection of vasopressor agents should be made with this in mind. Fluid therapy should be instituted as indicated.

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# Colon and Rectal Polyps

## Relationship to Carcinoma

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A CLEAR DEFINITION of the terms involved should be an obvious prerequisite to any discussion of a condition or disease state. Confusion as to the nature of polyps of the lower intestinal tract has come about not only through differences in interpretation of pathologic material but also through lack of consistency in the use of terms.

It should be understood that the word *polyp* is purely a clinical description of a projection of tissue from the mucous membrane of the intestine. The projection may be sessile or pedunculated. *Adenoma* refers to a benign polyp composed of the glands lining the mucous membrane of the intestine. A *papillary* or *villous* adenoma is another kind of polyp, which some investigators consider a growth variant of the ordinary adenomatous polyp. Lesions such as lipomas, leiomyomas and carcinoid tumors may also appear in the form of a polyp.

A malignant polyp may simply be defined as one which shows histological evidence of malignant change. This however may not be so simple to determine, as is evidenced by the fact that the same cellular aberrations in a polyp may be interpreted differently by different pathologists. Figure 1 serves to illustrate this point. The terms *atypism*, *carcinoma in situ* and *adenocarcinoma* may be used by different pathologists to describe the same lesion.

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• A review of certain significant contributions to the literature was undertaken to evaluate evidence for and against the proposition that there is positive relationship of adenomatous polyps to carcinoma of the colon and rectum.

The overwhelming evidence would seem to indicate that some adenomatous polyps are disposed to develop into invasive carcinomas. Since there is no way of determining which polyp has this tendency, it would seem prudent to remove all polyps that can be removed safely with a sigmoidoscope and remove any in the colon that are more than 1 to 1.5 cm in diameter, the criterion as to size depending upon other factors in each case.

It is established that colon and rectal carcinomas may also arise from the mucosa without first appearing in a polyp. Such lesions may clinically appear as shallow ulcerations.

It has therefore become obvious to investigators in this field that the most reliable criterion of malignancy in a polyp is whether or not there is invasion of the muscularis mucosa by malignant-appearing cells, as diagrammed in Figure 2.<sup>6,16</sup> The presence or absence of invasion is an important point, since it may be the deciding factor in the mode of treatment; local excision being sufficient for non-invasive lesions while a resective procedure is usually advisable for a definitely invasive growth.<sup>11</sup> Some pathologists feel that even this criterion is difficult to evaluate.

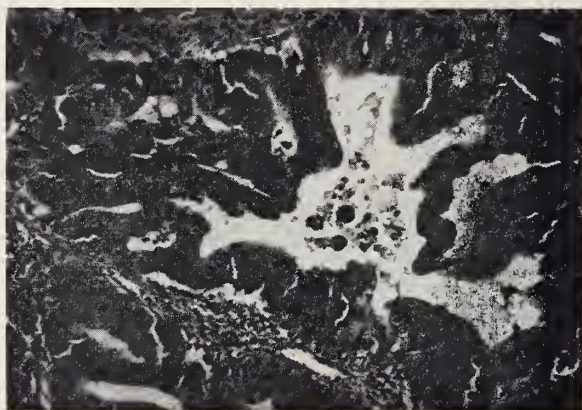


Figure 1.—Low power ( $\times 20$ ) and high power ( $\times 120$ ) photomicrographs of a polyp interpreted by one pathologist as adenocarcinoma and by another as carcinoma in situ.



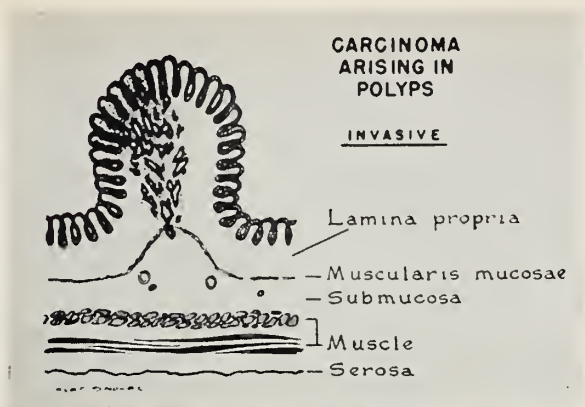


Figure 2.—Diagram of malignant cells shown invading the muscularis mucosal layer. (Reproduced from Surgery, Gynecology and Obstetrics, 94:623, 1952, with permission of the authors and the publishers.)

It seems quite reasonable to use the term *pre-invasive malignant polyp* to describe those polyps in which malignant-appearing cells are confined to the mucous membrane and lamina propria. Helwig<sup>7</sup> has expressed belief that adenomas with foci of carcinoma probably represent the transition from a benign to a malignant state. He noted that all gradations from adenoma with foci of carcinoma to unquestionable carcinoma have been demonstrated in polyps observed at necropsy. Morson<sup>10</sup> emphasized that all stages in the development of malignant change, from a simple adenomatous proliferation through the stage of pre-invasive carcinoma (carcinoma in situ) to invasive carcinoma, can be seen in adenomatous polyps of the large intestine.

#### CONFLICTING EVIDENCE OF RELATIONSHIP

Considerable evidence has been accumulated through cooperative effort by pathologists and surgeons that would seem to indicate conclusively that adenomatous polyps are pre-cancerous and capable of becoming definitely malignant. One must hasten to add, however, that certainly the great majority of adenomas may never show a transition to carcinoma. This observation nevertheless should not detract from the conclusion that a certain number of adenomas do indeed progress to malignant tumors of the colon and rectum. Dockerty<sup>4</sup> of the Mayo Clinic said that he believes all adenomatous polyps eventually become malignant. A corollary question is also of interest: Do all or almost all carcinomas arise in adenomatous polyps? Helwig, who carefully studied the relationship of adenomas to carcinoma at necropsy in over fourteen hundred cases, expressed belief on the basis of his observations that the majority of carcinomas of the large intestine do develop in adenomas. In his autopsy studies he noted 12 small carcinomas; and on the

basis of histological findings he believed that ten arose in adenomas and two arose directly from the mucosa. Grinnell and Lane<sup>6</sup> concluded that the vast majority of cancers arise in adenomatous polyps because of the following observations:

Carcinoma in situ is very rarely if ever seen in normal mucosa but is frequently seen in adenomatous polyps.

In a review of all the small apparently de novo cancers in the material they studied, none was found to be less than 5 mm in diameter; however, invasive foci of cancer less than 5 mm in diameter were frequently seen in adenomatous polyps. This same observation was made by Enterline,<sup>5</sup> who further pointed out that if carcinoma commonly arises de novo, then more cases of minute carcinoma would be found in the innumerable sigmoidoscopy examinations now performed.

In recent years the potentially malignant nature of adenomatous polyps has been questioned. As reasons for skepticism, Spratt, Ackerman and Moyer<sup>14</sup> noted the following from necropsy material in which 131 polyps were observed: First, significant difference in distribution of polyps and co-existent cancers of the large bowel; second, the absence of residuum of an adenomatous polyp in cancers of the colon. On the first point these observers are at odds with many investigators<sup>3,6,7,10</sup> who have pointed to the similarity of distribution of adenomas and carcinoma of the large bowel as evidence to support the view that adenomatous polyps are pre-cancerous. Furthermore their evidence must be considered in this light: Since perhaps less than one polyp in 20 has the propensity to become malignant, a study of the distribution of only 131 polyps is not on firm ground statistically. As to their second item of skepticism—that residual areas of adenomatous tissue were not observed in carcinomas—this need not be interpreted as supporting the view that polyps are not pre-cancerous, for they admitted that they did not make a minute, systematic search for residua of adenomatous tissue in their cancer series of 298 cases. It must be recognized that even if such a search had been made, the results might still be confused since one pathologist might call an area adenomatous while another might label it well differentiated adenocarcinoma. In fact in the very report in question Ackerman disagreed with some of the interpretations of Welch and co-workers after examining their material. Some of the lesions that the Welch group had reported as adenomatous polyps with cancer in them, Ackerman saw simply as cancers.

Actually there have been reports of studies in which residua of adenomatous tissue were seen in frank carcinomas. Enterline<sup>5</sup> reported six cases



and included two microphotographs illustrating the phenomenon very clearly. Machie<sup>9</sup> also published a micrograph of a frank carcinoma of the colon with a remnant of benign adenomatous tissue. A somewhat comparable situation may occur when invasive carcinoma is found in an adenoma. This may be seen in an early carcinoma before complete destruction of the adenomatous polyp has occurred. Helwig<sup>7</sup> studied 100 intestines containing lesions qualifying as carcinoma arising histologically in an adenoma. In 19 of these intestines there were 23 adenomas with invasive carcinoma, and nodal metastasis had taken place in two cases.

Castleman and Krickstein<sup>2</sup> also have taken a critical view of the pre-cancerous nature of adenomatous polyps. They re-evaluated 60 cases from the Massachusetts General Hospital previously reported by Welch and his workers as carcinoma (of various grades) arising in polyps. Their revised diagnoses were classified into three groups—polypoid carcinomas, papillary or villous adenomas, and adenomatous polyps. It is not clear how this revision in diagnosis aids in disproving the pre-cancerous nature of adenomatous polyps. The interpretation of a lesion as a polypoid carcinoma rather than as carcinoma arising in a polyp does not prove by any means that the polypoid carcinoma arose as a *de novo* carcinoma and not from an adenomatous polyp. This study does demonstrate, however, how difficult the pathologic interpretation of these lesions can be, when the same material at the same institution is diagnosed so differently ten years later.

Ackerman's group<sup>14</sup> and Castleman<sup>2</sup> agree that villous adenomas are definitely pre-malignant. The opposing view, that the papillary or villous adenoma is merely a growth variant of the adenomatous polyp, is held by many authorities, including Ewing and Dukes.<sup>6</sup> Some polyps may show features of both a papillary and an adenomatous growth, which permits conjecture of a possible similar biologic tendency for them to develop into carcinoma since they may merely be variants of each other.

#### SUMMARY OF EVIDENCE

The evidence which points to adenomatous polyps as pre-malignant lesions is as follows:

Adenomatous polyps and carcinoma of the large intestine have a similar age and sex incidence.<sup>6,10</sup>

Their distribution is similar in the large bowel.<sup>3,6,7,10</sup>

Careful pathologic examination of primary carcinomas may show evidence of residual benign adenomatous tissue at the margin of the growth.<sup>5,7,9</sup>

Foci of invasive carcinoma may be seen arising in what appears as an adenomatous polyp.<sup>7,10</sup>

The incidence of cancer is higher in large polyps than in small polyps, indicating that cancer developed during the period of growth.

The observation that adenomas may be found in up to 50 per cent of patients with carcinoma of the colon and rectum; and the corollary observation that carcinoma of the colon is over three times more common in patients with polyps than in those without polyps and almost twice as common in patients with multiple polyps as in those with a single polyp.<sup>1,11</sup>

The observation that atypism, carcinoma *in situ* or intramucosal carcinoma is seen only in adenomatous polyps and not in normal mucosa, which supports the belief that the majority of cancers arise in adenomatous polyps and papillary adenomas.<sup>5</sup>

It may be argued that all this evidence is indirect and circumstantial. Direct evidence, however, can only be obtained by biopsy of a polyp, diagnosing it as an adenoma and then observing the lesion until it develops into carcinoma. Such evidence has in fact been presented by Hertz and co-workers.<sup>8</sup> They reported two cases in which biopsy of a pedunculated polyp was performed and a diagnosis of benign adenoma was made. Both patients refused further care at the time. One patient returned 13 years later with an annular carcinoma at the same level; the other patient returned four years later with a carcinoma 3 cm in diameter at the site of the benign adenoma. In both cases the tumors were excised. No residual adenomatous tissue was observed on examination of multiple sections of the carcinomas. Scarborough<sup>12</sup> reported on ten cases in which polyps had been seen proctoscopically or detected by barium enema and the patients then were observed for two to eighteen years. The polyps in these cases were 1 to 1.5 cm in diameter. Biopsy was not done. In these ten patients invasive carcinoma developed, and in three metastasis was evident.

#### THE REAL PROBLEM

Argument as to whether an adenomatous polyp may become a cancer is to some extent academic, the real problem being the practical management of the polyp as viewed through the proctoscope or as seen on a barium enema film. Both Ackerman and Castleman admit an adenomatous polyp cannot be distinguished from carcinoma either proctoscopically or radiographically. Histologic examination is necessary. At the University of Pennsylvania 33 frank carcinomas of the colon which were thought by all clinical observation to be benign polyps were removed. Nineteen of them had been

noted in roentgen studies. They ranged from 5 mm to 3.7 cm in diameter. Twenty-two were sessile and 11 were pedunculated. In 21 cases the lesion had invaded the muscle or serosa and in seven cases metastasis to lymph nodes had occurred.

If the lesions may be seen through the proctoscope and can be safely removed, then in most cases they present no major problem. However, if a polyp is seen on the barium enema film or is visualized through the proctoscope but is too large to remove safely from below, one must then decide as to the advisability of opening the abdomen. This decision should take into account the size of the lesion and the age and general condition of the patient, since the risk of operation must be weighed against the risk that the polyp in question is a premalignant lesion or is already a polypoid carcinoma. Although polyps under 1 cm in size are rarely malignant, one can not rely on this criterion with complete confidence, for in a series of 20 primary carcinomas under 2 cm in diameter reported by Ackerman,<sup>13</sup> 14 were polypoid in character (either pedunculated or sessile) and six were under 1 cm in diameter. When a polyp has grown to a diameter of more than 1 cm, there is a noted increase in the incidence of malignant change. In different series (in which not all factors were equitable) the incidence has been reported at from 9 per cent to 24 per cent. Hence it would be reasonable to remove polyps of this size, since the chance of malignant disease would exceed the operative risk by a significant degree in most ordinary risk patients.

The benefit of routine sigmoidoscopy and removal of polyps has been substantiated by Rider,<sup>11</sup> who noted that the incidence of carcinoma and adenomatous polyps was four to five times less in subsequent examinations of patients followed in a cancer detection clinic.

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# Fractures of the Larynx

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SEVERE AND DEBILITATING INJURY to the larynx is becoming more frequent with the increasing use of high speed transportation, both the automobile and the private airplane, yet there is little about it in the medical literature.

In dealing with persons injured in automobile accidents and the like, it is important to determine early whether the larynx is injured, to evaluate the severity of whatever injury there may be and to appreciate that prompt treatment may prevent subsequent disability. We believe that in cases of severe injury open reduction and repair should be carried out as soon as the general condition of the patient permits.

The symptoms resulting from severe laryngeal injury are few but impressive. Obstruction to the airway is almost universal in severe laryngeal trauma, necessitating tracheotomy in the first few hours as a life saving procedure. If tracheotomy is needed, one may be sure there is sufficient injury to require aggressive surgical treatment. Aspiration of saliva, fluids and solids into the tracheobronchial tree is common, due to a disturbance of the normal sphincteric function of the larynx. Aspiration on swallowing indicates the larynx is damaged sufficiently to warrant open surgical repair.

Hoarseness is the most common symptom of laryngeal injury but is not so gravely significant as airway obstruction and aspiration. Hoarseness may be due to damage to the structure or to impaired function of the cords. Damage to the structure may vary from edema with hematoma to severe laceration of the cords. A disturbance of function of the cords may be caused by nerve damage or by a change in the position of the cord caused by fracture of thyroid or cricoid cartilage. Pain on swallowing is usually present, particularly if the hyoid bone is fractured. Coughing of blood is usual and if demonstrated to arise from the larynx or upper cervical trachea is of great clinical significance, for it is indicative of a laceration of the laryngotracheal structures. Damages of that kind, if not properly treated, will result in fibrosis and stenosis on healing. Emphysema in the absence of injury to the chest likewise indicates laceration of the laryngo-tracheal structures. From an evalua-

• It is advised that in significant laryngeal trauma open exploration be done as soon as the general condition of the patient permits. The authors believe that the exact nature and severity of a laryngeal injury cannot otherwise be known, and that no method of closed reduction and fixation will accomplish as good results as open repair. Conservative expectant treatment will in many cases result in a much greater morbidity and a poor ultimate result.

tion of the symptoms alone, one may estimate the likelihood of the presence or absence of laryngeal injury. If significant damage seems likely, detailed laryngeal examination should be carried out.

Besides the routine examination of the exterior of the neck and indirect and direct laryngoscopy, x-ray studies, including soft tissue films, laryngograms and esophagrams, are useful. Our experience has been, however, that even though much information may be obtained by extensive examination, the exact type and degree of injury cannot be ascertained except by open surgical exploration. The value of other means of examination is in determining whether or not significant laryngeal injury exists. There are several conditions which if observed laryngoscopically, dictate open operative exploration and repair. One is significant laceration of the mucosa of the laryngotracheal structures, for almost always concomitant with it is fracture of the cartilaginous framework. Another is foreshortening of the cords and aryepiglottic folds in an anterior-posterior direction. These conditions indicate fracture of the thyroid cartilage or hyoid bone, the severity of which is unknown. If the larynx appears to ride high, with the epiglottis compressed against the tongue, significant lacerations of the thyrohyoid or cricothyroid membranes with cartilage fracture are probable.

No hard and fast indications for open reduction and repair in cases of laryngeal injury can be stated, but the following points may serve as a guide:

1. If emergency tracheotomy is needed, so is prompt open reduction. Too often one sees cases in which tracheotomy was done in the stage of acute edema, the tube was removed a week or so later, and then had to be re-inserted when fibrosis and stenosis developed.

Presented before the Section on Ear, Nose and Throat at the 92nd Annual Session of the California Medical Association, Los Angeles, March 24 to 27, 1963.

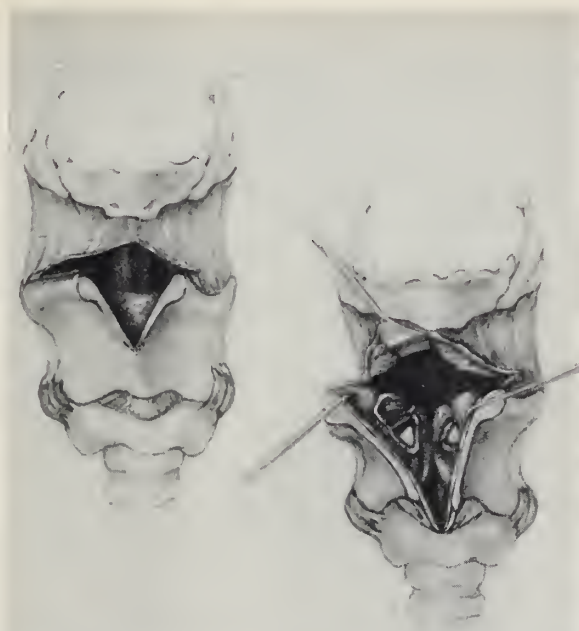


Figure 1.—Drawing of conditions observed at operation in Case 1. There was a vertical fracture of the thyroid cartilage with a through-and-through laceration of the thyrohyoid membrane and severance of the pediculus of the epiglottis (left). The larynx was surgically opened (right) and deep lacerations exposing both arytenoids were seen.

2. Demonstration of significant endolaryngeal laceration warrants early definitive repair. Without it, such lacerations heal with cicatricial stenosis of the airway and impairment of the voice.

3. Laryngoscopic observation of fore-shortening of the aryepiglottic folds or the true cords is indication for open exploration to make a specific diagnosis and permit proper repair.

On a review of the literature one finds little written regarding the early treatment of laryngeal injury. Most of the communications are concerned with the late results of injury, namely, laryngeal stenosis. It seems that the predominant belief is that all such injuries should be treated conservatively and expectantly with a wait-and-see attitude, open operative intervention being reserved for cases in which stenosis or dysphonia develops. A notable exception to this philosophy is that of Fitz-Hugh,<sup>1</sup> who advocated early operative intervention.

We believe that conservative management, with administration of steroids, enzymes and perhaps antibiotics, is suitable only if no evidence of severe injury can be found on careful examination. The operating procedure we use for specific diagnosis as well as treatment in cases in which severe damage to the larynx is suspected is as follows: The laryngeal structures are exposed, using a wide

horizontal incision in mid-neck with elevation of flaps in the subplatysmal layer. The strap muscles are separated in midline, thus exposing the thyroid cartilage, the cricoid cartilage and the hyoid bone. These structures are palpated and explored. If necessary to assess the damage, the entire laryngo-tracheal structure may be opened from the hyoid bone to the cervical trachea. We do not hesitate to sever the cricoid at midline if such exposure is needed. Damage to the cricoid cartilage is brought about not by simple incision and opening, but by cartilaginous necrosis either from infection or pressure. Lacerations are sutured and displaced cartilages or cartilage fragments are reduced to their normal positions. It has been found that if the arytenoid cartilage has been disarticulated or greatly displaced, it is preferable to remove it. In this way the posterior end of the vocal cord is permitted to find its natural position rather than to be bound and held in a position of poor function by a displaced arytenoid. After suture of all lacerations, and the realignment of cartilage fragments, internal fixation is necessary until healing occurs. A non-reactive polyvinyl tubing or obturator is used for this purpose. It must be fixed securely within the larynx and allowed to remain four weeks. Then the larynx is reopened and the internal fixation removed.

#### REPORTS OF CASES

The following case is illustrative of early operation.

CASE 1. A ten-year-old girl was admitted to the University of California Medical Center four days after an automobile accident in which her neck struck the dashboard. She required intravenous fluids because of aspiration. On admission there was a well functioning tracheotomy with mild subcutaneous emphysema and a partially healed laceration under the chin. The child could speak in a whisper, but would aspirate on every attempt to swallow. Roentgen studies of soft tissue showed the larynx distorted and the laryngeal air column occluded. On direct laryngoscopic examination, lacerations of the aryepiglottic fold with foreshortening and a complete edematous obstruction of the endolarynx were observed.

On the sixth day after the accident, surgical repair was carried out. Conditions observed at operation are shown in Figure 1. The epiglottis had been severed from the thyroid cartilage and there was a deep laceration of the thyrohyoid membrane. A pyogenic membrane covered the exposed and fractured thyroid cartilage. On further opening of the larynx, deep lacerations of the aryepi-



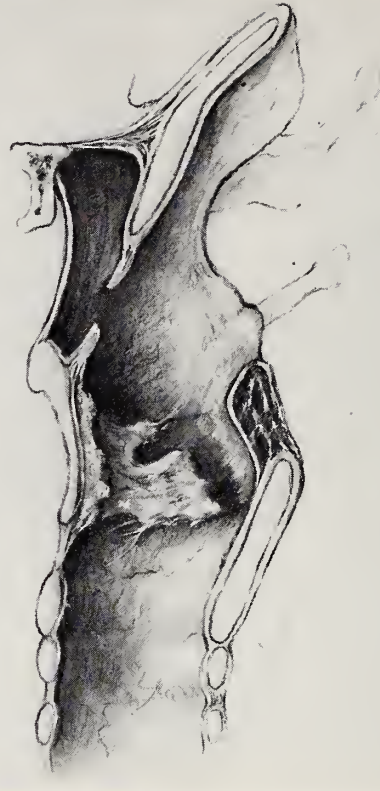


Figure 2.—This drawing of the conditions observed at operation in Case 2 shows a complete vertical fracture of the thyroid cartilage with upward displacement of the left ala. There was a laceration of the pediculus of the epiglottis and the cricothyroid membrane. Almost solid cicatricial stenosis was found within the larynx.

glottic folds were found which exposed both arytenoid cartilages.

The lacerations were sutured but the arytenoid cartilages were not removed. The base of the epiglottis was sutured to the thyroid cartilage and the thyrohyoid membrane was repaired. A polyvinyl tube was inserted within the larynx for internal fixation. It was left in place for one month. When it was removed through the endoscopic tube, the airway was found to be excellent. The voice was poor but was expected to improve.

A second case illustrates the complications attending late repair. Treatment extended over a period of more than nine months and two open operations were necessary, scarring and stenosis having developed.

CASE 2. The patient, a physician's son 20 years of age, was injured in an automobile accident three months before admission to the University of California Medical Center. Immediately after the accident tracheotomy had been carried out and for three weeks he was fed by nasogastric tube. Initial treatment was expectant and conservative until complete aphonia and stenosis of the larynx developed.

However, the patient could eat satisfactorily. On

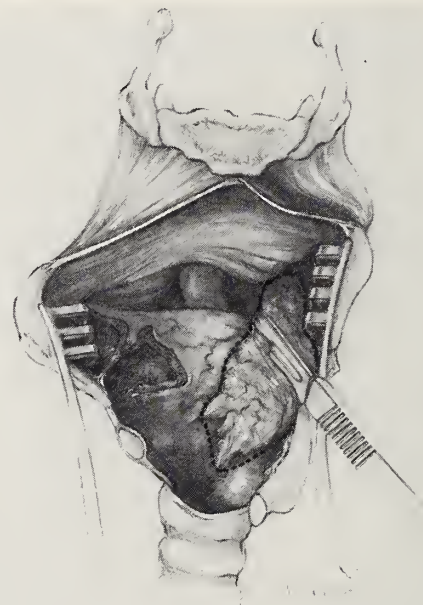


Figure 3.—At operation in Case 2 the larynx was opened from the hyoid bone to the first tracheal ring and scar was resected in preparation for a skin graft.

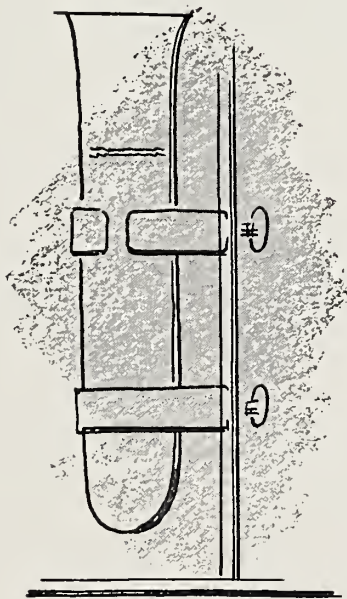
examination at the time of admission to University of California Medical Center, a complete stenosis at the level of the vocal cords was noted and there were no recognizable endolaryngeal landmarks. Exploration was carried out two days later. The conditions observed at operation are shown in Figure 2. The larynx was opened from hyoid bone to the first tracheal ring (Figure 3). Scar was excised, a displaced right arytenoid cartilage was removed and a split thickness skin graft was inserted around a plastic sponge mold. The left thyroid lamina was sutured to the cricoid cartilage and the epiglottis was sutured to the thyroid cartilage with heavy

catgut suture. The larynx was reopened ten days later in order to remove the sponge and to insert an acrylic obturator. The obturator remained in place six months, then was removed through an endoscopic tube. The airway was excellent but the voice poor. Speech was intelligible but lacked volume due to sacrifice of the true vocal cord structure. It was similar to the speech of false cord phonation.

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# Prevention of Facial Trauma in Automobile Accidents

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UNTIL RECENTLY, the majority of studies of injuries to persons in automobile accidents were directed toward identification and prevention of the causes.<sup>3</sup> Unfortunately, discovering and eliminating them has been a slow process and therefore can be expected to achieve only a gradual reduction in the number and severity of accidents.

With a burgeoning interest by the medical profession in the prevention and treatment of traumatic injuries, however, a new approach to the problem has been stressed. Under the basic assumption that a certain number of accidents are unavoidable, means are sought to prevent, or appreciably reduce in severity, the resulting human injuries. The most obvious advantage of this new approach is the attainability of the goal: an immediate and substantial reduction in traffic injuries and deaths.

Traffic accident investigators divide the events occurring during an accident into phases. The "primary collision" occurs between two or more vehicles or a vehicle and an environmental object. Prevention of this collision has been the aim of most efforts. However, the human injuries in a traffic accident occur not during the primary collision but during a subsequent event called the "secondary collision." The secondary collision occurs split seconds *after* the primary collision when the occupants of the vehicle collide with the interior of the car. It is readily apparent that if this secondary collision could be prevented or lessened, the resulting human trauma could be likewise be prevented or reduced in severity.

How then can the secondary collision be changed? To persons familiar with research in the field, the answers are readily available. But the person who most needs to know, the average motorist, is least well informed on this subject.

The secondary collision can be changed in two ways: first, by using proper restraining devices. With the use of seat belts and a suitable upper torso restraint, not only is the body prevented from striking parts of the car interior, but also the great forces which are generated can be safely distributed and absorbed over a wide area of the body. Stress is directed to the areas of human anatomy best suited to absorb stresses, and delicate portions, such

• Automobiles do not protect passengers from the forces generated in traffic accidents. Although some compensatory protection can be provided by restraining devices, seat belts are not enough and must be supplemented by upper torso restraints. Cars should be designed with a view to better protection of passengers against injury from striking against hard surfaces or protuberances.

as the face, are protected. However, this method of protection depends on the passenger compartment's remaining intact.

The second method of protection is achieved by modifications of vehicular design to make the exterior energy-absorbing and the passenger compartment resistant to crushing. In addition, the interior must be adequately cushioned and all protruding objects removed.

Ideally, proper restraints and a safe vehicular design should be combined. However, vehicles that provide such protection have yet to be designed, nor is there any evidence that they will be forthcoming in the near future. Therefore, proper body restraints are the only available safeguard in a traffic accident.

The following case illustrates the need for adequate restraining harness and adequate attention to safety of passengers in automobile body design.

A 15-year-old girl was sitting in the right front seat of a 1960 four-door passenger automobile and was wearing a properly fastened seat belt. The driver, in swerving to avoid a pedestrian, hit a tree at a speed of about 30 miles an hour. The patient's face struck the padded dashboard of the car.

Both occupants were taken to a nearby emergency hospital. The driver had a fracture of the left ankle. The girl passenger was found to have a complete transverse fracture of the maxilla with shattering of the anterior walls of both maxillary antra, a fracture of the left malar bone, fractures of both inferior orbital rims, and multiple compound comminuted nasal fractures.

The direction and magnitude of the forces that were responsible for her injuries could be inferred from the appearance of the front of the automobile. The marks of her teeth were visible on the padded dashboard against which her face struck.

Appropriate maxillofacial procedures were performed to obtain adequate reduction and demobilization of the multiple fractures.

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Submitted May 6, 1963.





Figure 1.—Illustration of advantages of harness to restrain upper torso over the conventional seat belt across the lap. At the left a model shows the forward flexion of a passenger wearing a seat belt, during deceleration. The face is in a position to strike the dashboard should the car be halted abruptly. The center picture shows the position of a passenger wearing a seat belt and upper torso restraint while the automobile is traveling at constant speed, and the picture at right shows the effect of the torso restraint during deceleration. The forward thrust is absorbed in pressure at the shoulders rather than by impact against the dash.

Two vital tenets of traffic safety are emphasized in the case history: that severe injuries result from inadequate body restraints and from improper vehicular design. The patient was wearing a properly adjusted seat belt, but it did not keep her head from striking the dashboard, and the padding on dashboard did not prevent serious injury from the blow.

Contrary to current publicity, seat belts do not provide complete protection.<sup>4</sup> Authorities in the field of traffic safety have documented and stressed this inadequacy. A study by the Institute of Transportation and Traffic Engineering of the University of California at Los Angeles<sup>5</sup> compared a shoulder loop restraint, a chest restraint and a standard lap type seat belt. The lap belt was least effective. It permitted flexion of the upper torso and permitted the head to strike the interior of the vehicle. The lap belt left in jeopardy the most vital part of the human anatomy.

Another detailed study on protection from impact indicated that if a passenger in a vehicle is to be prevented from hitting the front of the compartment, his forward movement must be decelerated by a lap belt and upper torso restraint.<sup>1</sup>

The subject of vehicular design is well documented. In 1957 one investigator stressed that changes in automotive design would save lives.<sup>2</sup> He said that most dashboard padding is inadequate to absorb the forces generated in a collision. Foam rubber and similar substances now in use absorb so small a proportion of the forces that they serve no practical purpose.

Up to the writing of this article, the changes in vehicular design are inadequate to afford protection to passengers. Hence it is vital that the automobile passenger avail himself of the only other type of protection offered: adequate restraining device.

#### RECOMMENDED RESTRAINING DEVICES

The need for adequate protection in collisions is demonstrated by a model wearing a standard lap type seat belt. In a simulated sudden deceleration from 25 miles an hour the lower torso is restrained but the upper torso is flexed forward, thus permitting the head and face to hit the dashboard. If the passenger wears an upper torso restraint in addition the torso does not flex enough to let the face hit the dashboard. The belt shown is a double loop shoulder harness which buckles into the seat belt and therefore is automatically released at the same time as the lap belt.

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# Failed Psychiatric Clinic Appointments

## Relationship to Social Class

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THREE OF EVERY TEN appointments made at the Psychiatric Outpatient Clinic of the Los Angeles County General Hospital are not kept and two of these are failed without notification. This proportion appears to be substantially higher than the rate of failed appointments in the offices of private practitioners and somewhat higher than in private clinics. It is felt that this difference is not entirely related to the type of medical facility but is due in part at least to the social class status and other social characteristics of patients seen in the two situations. In order to understand this difference, an investigation was undertaken to correlate patients' social characteristics with their record as to the keeping of initial appointments in the Psychiatric Outpatient Clinic of Los Angeles County General Hospital.

One of the things psychotherapists most often require of patients is prompt and regular attendance at therapy sessions. Failure to meet these requirements is usually interpreted by the therapist as significantly related to the patients' motivation or resistance to treatment. Therefore, the study of appointment-keeping in persons of different cultural experience is relevant to the larger problem of appropriate therapeutic procedures for persons of different socio-cultural backgrounds.

Current conceptual models of human behavior integrate physiological, individual psychological, and socio-cultural factors. In the past, single factors have been studied frequently without due regard for the others. Among the many socio-cultural influences related to mental health, recent research has demonstrated the importance of socio-economic status. The incidence of mental disorder, especially the major mental disorders, appears to be greatest in the lower social classes.<sup>5,6,9</sup> Upper class patients are more frequently diagnosed as neurotic, lower class patients as psychotic.<sup>4</sup> Differences in frequency with which mental disorder is treated as a medical

• A study was made to determine what factors might be related to failure of patients to keep appointments at a county hospital psychiatric clinic. The hypothesis that the lowest status groups would have the poorest appointment records was substantiated in that they had the highest proportion of broken appointments without notification. Contrary to expectations, however, the highest status groups had poorer records than those in the central status groups—the skilled or semi-skilled workers and those with high school education.

Marital status was also found to be related to appointment status, with divorced and separated persons displaying the greatest likelihood of breaking appointments without notifying the clinic.

problem, the kind of medical treatment received and the outcome of psychiatric treatment when received, also appear to be related to class status.<sup>4,9</sup> Middle and upper class patients tend to have analytic therapy and lower class patients directive therapy with somatic treatment. Even in a clinic where treatment did not depend on ability to pay for it, Hollingshead and Redlich found a correlation between class status and type of treatment. Persons they classified as "lower class" tended to reject traditional psychoanalytically-oriented therapy, and likewise psychotherapists tended to reject them as patients.<sup>4</sup>

### METHOD

The present study was an investigation of the social characteristics of 199 consecutive new applicants to the clinic beginning September 15, 1962, who met residence requirements for care in county facilities. The median waiting period between the application and the first appointment was one week, and the longest waiting period was four weeks. A principal set of characteristics investigated were occupational status, education and income, which are three frequently employed indicators of socio-economic status. Other characteristics investigated were sex, racial or ethnic background, marital status, referral source and previous experience with the

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Los Angeles County General Hospital. A questionnaire obtaining this information for each applicant was completed at the time of the initial contact (telephone call or visit) with the clinic. These data were then correlated with performance in keeping the first clinic appointment. The statistical significance of observed differences was tested by means of chi-square tests.\*

A control sample of the next 200 new applicants (omitting the holiday period) was studied to determine whether the interest expressed in the patients by virtue of the questionnaire affected the extent to which appointments were kept or failed. It was found that the difference between the two samples was small and not statistically significant.

### *Socioeconomic status and appointment performance*

What is known of the characteristics of lower class culture and the condition of lower class life led us to predict that the higher the class status, the better the appointment-keeping records would be. Four of the measures of status were employed: occupation of head of household, educational level of applicant, family income and current employment status of applicant.

Two group medical insurance plans have had recent experience in offering prepaid psychiatric treatment—the Hospital Insurance Plan in New York City and the Permanente Medical Group of Southern California. In both cases the indications are that the white collar group more frequently seeks psychiatric help than the blue collar group. Previous studies have shown that readiness for self-referral is more frequent among those with higher occupational status or educational achievement.<sup>3,5,9</sup> This finding seems to indicate that lower class persons are less likely to define their problems as psychiatric than are those higher on the status ladder. Indeed, Hollingshead and Redlich reported that lower class patients are less likely to locate their difficulties in themselves and more likely to locate them in their situation than are middle and upper class patients.<sup>5</sup> Lewis reported that persons partaking of the “culture of poverty have a sense of resignation and fatalism based upon the realities of their difficult life situation . . . and a high tolerance for psychological psychopathology of all sorts.”<sup>7</sup> If the lower class person most frequently doubts that psychotherapy will help and these doubts are not fully resolved before he applies, then this factor would lead to the hypothesis established.

Also tending to support this hypothesis is the frequently noted attitudes toward time and the future

TABLE 1.—Appointment Record by Occupational Status of Head of Household, All Applicants

Occupation of Head of Household	Appointment Record			Total
	Kept	Cancelled	Failed	
Professional and Managerial .....	67%	33%	....%	100%
Clerical and Sales 64	15	21		100
Skilled workers ....	90	5	5	100
Semi-skilled workers .....	75	10	15	100
Unskilled and service workers*	67	5	28	100
Unemployed more than 6 months†..	64	11	25	100
Total .....	69%	11%	20%	100%

\*Includes all domestic service workers; a few protective and personal service workers were included in other occupational categories (e.g., barbers, beauticians, policemen, firemen).

†Did not include persons supported by spouse's earnings, savings, rent, or other personal resources. Applicants supported by parents were not included if under 20 years of age or attending school.

characteristic of the lowest economic classes. For example, Lewis said that the “culture of poverty” includes “a strong present time orientation with relatively little ability to defer gratification and plan for the future.”<sup>7</sup> This attitude toward time is also more frequent in the cultures of certain ethnic groups who are disproportionately represented in the economically-deprived strata of the Los Angeles community.<sup>4</sup> Lastly, it was also believed that the lower social classes would have fewer resources with which to meet circumstances operating to hinder their keeping appointments—illness, unanticipated employment opportunities, transportation failures and the like.

On the other hand, it was anticipated that one attitude held more commonly in the middle and upper classes would operate against the relationship hypothesized, namely, reluctance to seek publicly-supported medical care, to admit medical indigence or the need for “charity.”

Perhaps the best single index of social class status is occupation. Occupations were classified according to the *Dictionary of Occupational Titles*.<sup>2</sup> The range of higher-paid occupations represented by clinic applicants was limited, probably by the general knowledge that inability to afford private medical care is a prerequisite for treatment at the county hospital. Only six professional or managerial heads of household were represented among the 200 applicants. Only two of these were currently employed, one being the husband of the applicant rather than the patient; the incomes of both families were under \$400 per month.

Our findings tended to substantiate our hypothesis, especially with regard to appointment failures without notification. (See Table 1.) Among the group of chronically unemployed (unemployed

\*All differences reported in this paper would have occurred by chance less than 5 times in 100 unless otherwise specified.



TABLE 2.—Appointment Performance by Employment Status at Time of Clinic Application, Male Applicants

Employment Status	Appointment Record			Total
	Kept	Cancelled	Failed	
Employed at time of clinic application	84%	3%	13%	100%
Not employed at time of clinic application	63	5	32	100
Total	73%	4%	23%	100%

more than six months) and unskilled or domestic service workers, 25 per cent failed appointments without notification as compared with 15 per cent of the remainder of the applicants. Among males the best record for keeping appointments was among skilled workers (for example, master carpenters, factory foremen, skilled auto mechanics, machinists). Male white collar workers had no better appointment records than the lowest status group except that the few professional and managerial workers cancelled rather than failed appointments without notice. Among females clerical and sales workers tended to equal more nearly the records of skilled and semi-skilled workers (machine operators). The records of female unskilled and domestic workers, on the other hand, were very similar to those of the chronically unemployed group, while the unskilled and service male applicants had better records than the chronically unemployed applicants.

It is interesting to speculate that the hypothesis was not substantiated fully for the white collar group because of their greater reluctance to make use of a publicly-supported clinic. The skilled and semi-skilled workers, although having the same or higher incomes, are possibly more ideologically disposed to accept the value of governmentally-supported medical services as a result of political and union affiliations.

Whether or not the applicant himself was currently employed was also found to be related to appointment record. While 84 per cent of the employed males kept their appointments and 12 per cent failed without notification, 63 per cent of the unemployed kept their appointments and 32 per cent failed without notification. Differences in the same directions were found for females but they were smaller and not statistically significant, probably because of the housewives included among the unemployed women. (See Table 2.)

With respect to educational background of the applicant, the tendency for central status positions to have the best appointment records again appeared (Table 3). Among men who had been enrolled in college—including eight college graduates

TABLE 3.—Appointment Record by Educational Background, Male Applicants

Educational Background	Appointment Record			Total
	Kept	Cancelled	Failed	
Some college or college graduate	65%	4%	31%	100%
Some high school or high school graduate	84	3	13	100
Elementary school	59	8	33	100
Total	73%	4%	23%	100%

—65 per cent kept their appointments while 31 per cent failed without notification. There were 12 men who had not entered high school; only seven kept appointments while four failed without cancellation. Men with some high school education and those who had graduated from high school had similar records. These men together were found to have kept 84 per cent of their appointments and failed without notification in only 13 per cent of their appointments. For women, educational background was not related to performance in keeping appointments. It is possible that the group of college-educated males who apply to the clinic represent a group of under-achievers whose personality organization is involved in both failure to keep appointments and failure to do well financially despite their educational qualifications. College graduates were also disproportionately both unemployed and unmarried.

Within the small range of incomes represented by clinic applicants, income had little relation to the keeping of appointments.

#### *Referral source and appointment record*

It was hypothesized that the best records with respect to appointments would be for the self-referred and those referred by private physicians. The former hypothesis was consistent with the view usually entertained by private psychiatrists that the self-referred patient is likely to be most "highly-motivated" for treatment. The second hypothesis was based on the findings of Clausen and Yarrow<sup>1</sup> that patients accepted the suggestion of psychiatric referral more favorably from a physician than from a family or friend; and that in many instances the family physician facilitated prompt referrals to the hospital, especially when the doctor had the advantage of consultation with the spouse to learn more of the whole range of the patient's behavior. There were some very suggestive differences among patients referred by different agencies; however, the number of cases referred from each source was so small that the differences did not reach the 5 per cent significance level (Table 4). The percentage of kept appointments was lowest, only 55 per cent,

TABLE 4.—Appointment Record by Referral Source, All Applicants

Referral Source	Appointment Record			Total	
	Kept	Cancelled	Failed		
Private physicians..	81%	14%	5%	100%	21
Family and friends	80	....	20	100	20
Medical and Surgical Unit of L.A.C.G.H. ....	73	9	18	100	49
Psychiatric sources	68	11	21	100	61
Non-medical sources*	58	13	29	100	24
Self-referrals .....	54	23	23	100	22
Total .....	69%	11%	20%	100%	197†

\*All patients are voluntary although a few are referred by probation departments or other law-enforcement sources as well as social agencies, etc.

†No information was available concerning referral source of two applicants.

TABLE 5.—Appointment Record by Marital Status, All Applicants

Marital Status	Appointment Record			Total	
	Kept	Cancelled	Failed		
Married .....	76%	12%	12%	100%	88
Single .....	66	16	18	100	38
Divorced or separated .....	62	5	33	100	66
Widowed .....	72	14	14	100	7
Total .....	69%	11%	20%	100%	199

for self-referred applicants and highest for applicants referred either by their family physician or their families and friends, for whom the percentage of kept appointments was 81 and 80 per cent, respectively. This seems to indicate the support of significant others in the life of an individual maintains his determination to seek help. It also implies that the family physician is more successful in screening referrals and providing this support than other agencies, especially than non-medical agencies, among whose referrals only 58 per cent kept appointments.

#### *Previous experience with L.A.C.G.H. and appointment record*

Since many clinic patients had had previous experience with the Los Angeles County General Hospital and since many of the medical and surgical clinics had not been giving definite individual appointments (though they now are), the relationship between experience with other units of the hospital and appointment behavior at the psychiatric clinic was investigated. It was found that there was a significantly greater likelihood for women to keep their appointments when they had had no previous experience with the hospital. A similar but not statistically significant relationship was found for men.

#### *Marital status and appointment record*

Married and widowed persons tended to have the best appointment records. The greatest discrepancy was the proportion of uncanceled appointment failures for divorced and separated persons—one third of these appointments as compared with about one eighth of the rest (Table 5). The finding that married persons have the best appointment-keeping records is in keeping with the finding that family referrals are successful.

#### *Sex, ethnic background, and appointment record*

Because of the general belief that women are more willing to seek medical help than men, it was hypothesized that women would have better appointment records than men. We found that men actually were slightly more likely to keep appointments than women; however, women who did not keep their appointments were much more likely to cancel their appointments than were men. Differences among non-Spanish white, Spanish-Americans and Negroes were small and not statistically significant.

#### DISCUSSION

The findings in this study tend to substantiate the hypothesis that behavior such as keeping appointments is related to social class and subcultural attitudes. It appears that a missed appointment may have quite a different significance for some patients than it has for a middle class psychiatrist. Thus, as has been pointed out by Spiegel, the psychiatrist's attitudes are at variance with the lower class person's attitudes toward time, toward the relationship between man and his fellows and between man and nature, and in his preference for "modes of doing."<sup>8</sup>

The relevance of the relationship between class and appointment-keeping is that it is part of a more comprehensive understanding of patients from diverse social classes and subcultures, and specifically how attitudes generated by these different backgrounds may mold behavior which may be perceived by the middle class physician as uncooperative, irresponsible, or unmotivated for help. Since the classical conceptual model of the helping situation in psychiatry has been directly related to middle class values, much difficulty may result when the patient has different values, and most especially when these involve disparate conceptions of the help the psychiatrist can give.

In this group of patients, it was shown that the private physician is performing a valuable service. That he does a good job of screening his patients is reflected in the highest percentage of kept appointments in our entire group. This tends to extend to the clinic situation the observation of Clausen and



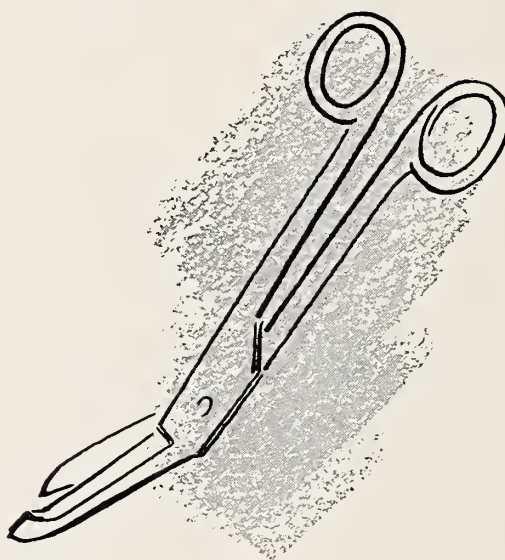
Yarrows that the family physician facilitates prompt and appropriate psychiatric referrals, especially when he is fully informed by the patient's family.

It was also found that those applicants supported in their application by family and friends, or family physician, were most likely to keep appointments. Those referred by other agencies, those who had had experience with the relatively impersonal medical setting unavoidably created by the Los Angeles County General Hospital, and those without families were less likely to keep their appointments. This finding points up the significance of the referral process itself in the successful relationship between clinic and patient.

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# Cancer of the Breast

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CANCER OF THE BREAST is the most common and in numbers the most lethal malignant lesion in females. It is estimated that there will be 64,000 new cases and 25,000 deaths from it in 1963, in the United States.

As a result of its high incidence and the accessibility of the breast and adjacent structures to examination and therapeutic attack it has been subjected to more thorough clinical study than any other cancer. Much of our knowledge concerning the behavior and life history of cancer in general has been derived from study of this disease.

The therapy of cancer of the breast is currently one of the most controversial areas in the treatment of malignant disease. The literature contains conflicting reports relative to the best methods of therapy, based principally upon statistical studies and their interpretation.

Certain paradoxes exist. In general the five-year survival rates have been improving but the mortality rate has remained substantially constant over the past four decades.<sup>31</sup> It is difficult to reconcile these facts.

The almost progressive improvement of results in individual institutions has been criticized as representing "selected series." The extensive material accumulated by the California Tumor Registry and the Connecticut Cancer Registry negates this criticism.

Some observers have claimed that our therapeutic efforts have produced no change in the inexorable course of this disease. It has been postulated that the improvement in five-year survival results solely from earlier recognition and, therefore, a longer period of observation of the disease. Broad generalizations of this nature have serious defects but are thought-provoking.

We cannot be complacent about the present results of therapy. Current methods have been challenged and approaches hopefully designed to improve results have been introduced or reintroduced.

There are different schools of surgical therapy. One of them has extended the standard Halsted-Willy Meyer operation to include the internal mammary chain of nodes and others have gone further

to include the supraclavicular and even the mediastinal nodes. This is an effort to encompass the disease surgically. Another group proceeds on the assumption that simple mastectomy will cure patients whose disease is limited to the breast and that if any metastasis has taken place no cure can be effected.

Neither approach is new. Simple mastectomy was employed long before the development of the conventional radical operation and largely discarded in favor of the latter. Extended radical procedures were tried by Halsted and abandoned because of the attendant morbidity and mortality and the failure to improve results.

Haagensen has addressed himself to an effort to eliminate futile and perhaps harmful application of the usual radical operation by triple biopsy.<sup>14</sup> The diagnosis is established by biopsy of the tumor. The extent of the disease beyond the breast is estimated by biopsy of the apical axillary nodes and of the internal mammary nodes of the upper three interspaces. If nodal metastasis is found the disease is considered inoperable and the patient receives therapeutic irradiation. If widely applied, these criteria of operability unquestionably would improve the results of the standard radical operation—but would they improve the overall results of therapy? There is some evidence that internal mammary node biopsy may not be a harmless procedure.<sup>19</sup>

The concept of "biologic predeterminism" advanced by Macdonald has been misunderstood and subjected to unjustified criticism.<sup>26</sup> The substance of it is that, as a result of little understood biologic factors inherent in the tumor cells or in the mechanism of host resistance or both, cancer of the breast falls into three categories. In one, the tumor is indolent and almost any form of therapy which will remove it will suffice. In another, the tumor has such aggressive characteristics that no form of therapy will be curative. In the group between these extremes, prompt and adequate treatment is important. Every surgeon experienced in the treatment of carcinoma of the breast recognizes the existence of these groups. The difficulty in application of this knowledge lies in the fact that there is no reliable method of determining into which cate-

To appear as part of the revised Cancer Studies.



gory a clinically operable cancer of the breast may fall.

McWhirter, because of his dissatisfaction with the results of radical mastectomy in Edinburgh, undertook to treat patients by simple mastectomy and heavy irradiation.<sup>28</sup> His method has a few supporters in the United States.<sup>11</sup> His statistics are based upon unselected cases but are subject to serious criticism as pointed out by Ackerman and others.<sup>1,3</sup>

Irradiation, as a sole therapeutic agent or as an adjunct to surgical operation, has enjoyed varying popularity over the years. It is seldom curative when employed alone. Preoperative irradiation has been largely discarded. Postoperative irradiation is extensively employed, particularly in cases with axillary metastasis. There is a conviction on the part of some surgeons that it has value but this is difficult to establish on a statistical basis. Some observers believe it has no value. Others advise withholding irradiation until recurrence has taken place, and the effect is apparently the same.<sup>32</sup> There is some evidence suggesting postoperative irradiation may be harmful rather than beneficial.<sup>8</sup>

Ablative and additive hormone therapy have come into greater prominence, particularly in disseminated and recurrent disease. What part they may play in the attack upon clinically curable cancer of the breast remains to be determined.

Chemotherapy used in conjunction with surgical operation is under intensive study. The agents employed leave much to be desired. While the early results are suggestive of some benefit, time will be required for final evaluation.

It is obvious that our treatment of cancer of the breast, although statistically improving and requiring no apology, cannot be considered truly satisfactory. If it were, there would be general agreement concerning it, and the multiple approaches in the effort to solve the problem would not exist.

In the broad effort to improve our therapy the challenging of accepted concepts has the value of stimulating new attitudes and new procedures. Some of these may add to our knowledge and our capacity to deal with the disease.

At this stage one cannot be dogmatic. Too many questions remain to be answered. On the other hand one should not desert procedures of established value or follow proposed new methods of inadequately proven worth, except for purposes of investigation under controlled conditions in appropriate institutions.

It will be our effort to outline a plan of dealing with cancer of the breast based upon the most widely accepted principles of cancer diagnosis and therapy. This is the wise course to follow during this period of confusion and controversy.

Truly early carcinoma of the breast is seldom found except as the result of microscopic examination incidental to the removal of breast tissue for another condition. Cancer begins from microscopic foci which require variable and unknown periods of time to become clinically apparent.

Early clinical recognition is dependent upon the palpation of a small lump within the breast. The nature of a small lump cannot be determined by physical examination and must be established by microscopic examination of representative tissue.

When signs clinically confirming the diagnosis are present—such as skin or nipple fixation or retraction—one is no longer dealing with clinically early disease. Skin retraction over a palpable mass can be produced by traumatic fat necrosis and may lead to an erroneous clinical diagnosis of cancer.

Clinically early carcinoma of the breast rarely produces symptoms. Occasionally a mild stinging or burning sensation may attract a woman's attention to some part of the breast and result in the discovery of a lump. About 90 per cent of lumps are found by accident.

Public education efforts have induced an increasing number of women to examine their breasts at the same time in every menstrual cycle or the same date in every month if they are postmenopausal. A woman who has learned the proper methods of "self-examination" can find abnormalities of very small size, frequently 1.0 cm or less in diameter. If a woman reports finding a small lesion her discovery can never be disregarded.

Women report for routine physical examinations more frequently than in the past. The physician is obligated to examine the breasts of these patients carefully.

Examination of the breast, whether performed by the patient or the physician, should always include thorough, systematic palpation by the flat of the fingers with the breast tissue between the fingers and the chest wall while the patient is in a supine position. Breast tissue presenting the characteristics of a lump while the patient is upright may lose these attributes in the supine position. Small masses which are not possible to feel in the upright position may become easily palpable when the patient is supine.

The breast frequently harbors benign tumors, masses of small cysts, single cysts, adenosis, hyperplastic lobules or excessive fibrosis which may present themselves as lumps. Clinically these may be indistinguishable from carcinoma.

The firmness, difficulty of demarcation and fixation in the breast are important observations but are not conclusive. Physiologic changes induced



Figure 1.\*—Unsuspected lesion in right breast found by mammography in 87-year-old woman who had a left simple mastectomy for carcinoma in October, 1959. Invasive intraductal cancer found at operation.

by indigenous or administered hormones should be taken into account.

Almost any surgeon of experience has made errors in believing malignant tumors to be benign and vice versa. Regardless of experience and diagnostic acumen, one cannot rely upon clinical diagnosis. The hazard of error is too great.

Mammography, as performed by Egan and Gershon-Cohen, may assist in discovering important lesions earlier than can be done by physical examination.<sup>9,12,13</sup> This method requires special techniques and experience in interpretation. At the present time the Cancer Control Program of the U.S.P.H.S. is undertaking a study of the reproducibility of this method in other hands. As it becomes more widely used and experience with it becomes greater it may become a very useful tool.

Nipple discharge, except as a result of lactation, cannot be disregarded. Normally the duct orifices are plugged by desquamated epithelial cells. If there is sufficient accumulation of secretion within the ducts it will make its way out through the nipple.

If it is thick, yellow, greenish or greenish brown,



Figure 2.\*—Occult carcinoma left breast with axillary metastasis in a woman 66 years old. Lesion disclosed by mammography and confirmed at operation.

it usually has little significance. Discharge of this type usually is associated with dilated ducts or cystic disease. Fresh or old blood or serous discharge is of greater concern. Serous discharge may contain microscopic blood. Regardless of type, nipple discharge should be smeared and examined by the Papanicolaou technique.

The finding of blood in the smear is proof of intraductal disease. The appearance of the epithelial cells may be of value but usually does not demonstrate the nature of the underlying pathological process.

Blood may come from any portion of the breast. It is most common with intraductal papilloma. Intraductal papillomata occur most frequently in the larger ducts beneath or near the areola. It is usually possible to ascertain which duct or which segment of the breast produces the blood by careful palpation of the breast in concentric circles becoming smaller as they approach the nipple.

Diffuse papillomatosis of the duct system is not uncommon. There may be pronounced proliferation of cells, forming heaped up layers which may fill

\*Mammograms kindly supplied by G. M. Stevens, M.D., Palo Alto Clinic.



the ducts. Intraductal carcinoma with or without invasion may be seen.

When the area of origin of the blood cannot be demonstrated, the age of the patient becomes an important factor. Younger patients can be followed carefully, in the hope that the source of blood will become apparent. After the age of 50 likelihood that malignant disease is the cause progressively increases.<sup>7</sup>

In most instances no significant mass is present, but if a mass can be found the problem is simplified. Transillumination occasionally may reveal a duct filled with blood but usually is disappointing.

#### BIOPSY

Biopsy is mandatory when there is a dominant mass in the breast, or when a mass which differs from other masses is present or when a thickened area differing from the remaining tissue in either breast is found.

Needle biopsy has strong advocates and in experienced hands yields good results but is not as accurate as surgical biopsy. The principal advantages of this method are: 1. It may be done as an office procedure under local anesthesia. 2. It provides for the evacuation of cysts. 3. It diminishes the time of definitive operation if a positive diagnosis can be established in advance. The disadvantage is that it may not be productive of representative tissue and surgical biopsy will be required in addition. It is not devoid of elements of trauma. It is well suited to establish the diagnosis in inoperable cases.

Aspiration of cysts is a justifiable procedure if certain precautions be observed. Cyst fluid should be examined by the Papanicolaou method for evidence of malignant change. Bloody fluid is suggestive of malignant disease. The patient must be followed. If the mass does not disappear or recurs, surgical exploration is indicated.

Surgical biopsy should be performed under full anesthesia and usual operating room technique. Gentleness is requisite throughout. The breast should not be scrubbed. The skin should be gently cleaned with ether and the area painted with the tincture preparation of one of the usual agents.

Excisional biopsy is generally advocated but this author believes it should be limited to small lesions (1.5 cm or less). In larger lesions or those manifesting even minor degrees of skin attachment incisional biopsy, removing a small segment of representative tissue is less traumatic. Cancer is often cut across in excising larger lesions.

If the duct producing blood can be identified it can be probed and investigated surgically with the probe as a guide. Accurate diagnosis of intraductal lesions by frozen section may be impossible.

It may be difficult when good permanent sections are available.

Biopsy should be undertaken only when the facilities for frozen section preparations and a competent pathologist are available. It should not be performed unless the surgeon is prepared by training and experience and has adequate facilities to proceed at once with definitive therapy.

Occasionally the pathologist may suspect cancer but be unable to make a positive diagnosis by frozen section. The surgeon must rely upon the pathologist but should not expect the impossible of him. The majority of lesions where there is doubt ultimately prove to be benign. Under these circumstances the wound should be closed and a diagnosis based upon permanent sections awaited. A delay of 24 to 48 hours, while undesirable, has not been demonstrated to be harmful.<sup>14</sup> Performance of a destructive procedure without a positive diagnosis cannot be justified.

We do not employ "triple biopsy."

If a positive diagnosis of cancer be made, the wound of biopsy should be fulgurated until dry, packed with gauze and closed by two superimposed rows of continuous sutures to prevent seeding of cancer cells in the wound. The patient should be reprepared and redraped, and fresh gowns, gloves and instruments used in the definitive operation.

#### FACTORS INFLUENCING PROGNOSIS

Some factors influencing prognosis are subject to clinical evaluation. Others are not. It is necessary to speak in generalities because statistical information indicates only probabilities in the individual case.

Most observers agree that the more medial the lesion, the poorer the prognosis. Medial lesions have a greater tendency toward metastasis to the internal mammary nodes.

As a rule the larger the lesion, the poorer the prognosis but indolent tumors may achieve large size and remain confined to the breast. Size is not per se a determining factor. Wide metastasis may have occurred from small tumors before they were recognized.

In most instances, known duration and rate of growth depend upon observation by the patient. Where reliable information exists, the longer the tumor has been present and the more rapid its rate growth, the poorer the prognosis. Rapidly growing "inflammatory" carcinoma carries a bad prognosis.

Hormonal factors play a part. These are largely related to the age of the patient. Women less than 45 years of age have a better prognosis than older women if no metastasis has occurred. If metastasis has taken place it is poorer.<sup>34</sup> It must be assumed

that premenopausal, menopausal and early postmenopausal women have tumors which will be stimulated by estrogens.<sup>21</sup> Pregnancy, lactation and a late menopause adversely affect prognosis, but cancer in pregnant or lactating women does not have the hopeless prognosis formerly believed. If metastasis has occurred it is very poor.<sup>16</sup>

The histologic pattern is important. Intraductal carcinoma, extracellular mucinous cancer and medullary carcinoma with lymphocytic infiltration have a good prognosis. Invasive tumors of these types, once metastasis has taken place, behave much as other cancers of the breast.

The degree of cell differentiation plays an important part. The more closely the cells resemble normal cells, the better; and the more anaplastic they are, the poorer the prognosis. The degree of invasiveness is important.

An additional factor which we cannot evaluate is the frequent demonstration of cancer cells in the general circulation.<sup>10,29,6</sup> Present evidence indicates that there is a relationship of this phenomenon to the extent of disease. Cells have been demonstrated in the general circulation in the resting state and at the time of operation. The potential of these cells to establish distant metastasis is unknown.<sup>29,6</sup> Certainly some of them have this potential but under what circumstances remains to be established.

The majority of the factors mentioned are dependent upon little understood biologic processes. When we can understand these, we will be closer to a solution of the problem of cancer of the breast.

One fact stands out. The extent of the disease at the time of instituting treatment is the most important single factor in determining prognosis. The prognosis deteriorates if nodal metastasis has taken place. This is well exemplified by data in the Cancer Prognosis Manual<sup>20</sup> on almost 35,000 cases. When the disease is confined to the breast the five-year survival rate is 76 per cent. If axillary metastasis has taken place the figure falls to 35 per cent. If distant metastasis has occurred, the disease cannot be eliminated by any present means of therapy.

#### STAGING OF CANCER OF THE BREAST

*Clinical Staging.* Many classifications based on clinical observations exist. Some are relatively simple; some extremely complex. There has long been a need for a simple, yet adequately comprehensive classification which could have general acceptance. The Joint Committee on Cancer Staging and End Results Reporting has rendered a valuable service in producing one.\* It is based upon clinical findings relating to the tumor, lymph nodes and

clinical and roentgenographic determination of distant metastasis—tumor, lymph node and distant metastasis (T.N.M.).

The Committee consists of representatives of the American Cancer Society, the American College of Surgeons, the College of American Pathologists, the American College of Radiology, the American College of Physicians and the National Cancer Institute with statistical consultants from the National Institute of Health.

#### CRITERIA OF OPERABILITY

Many sets of criteria to determine operability in cancer of the breast have been compiled. Some are restrictive and some are liberal. The objective is to apply radical operation when it can be of benefit and to avoid it when it would be futile and perhaps harmful.

It is obvious that there is no hope of cure by operation when distant metastasis has occurred. The difficulty of demonstrating distant metastasis has already been mentioned. A complete bone survey may be desirable but is impractical in many instances. X-ray examination of the chest, lumbar spine, pelvis and upper femora suffices for practical purposes.

In the absence of evidence of distant metastasis, operability is determined by local examination. The findings indicating inoperability are: supraclavicular node metastasis; extensive skin involvement, especially of the inflammatory or satellite metastasis type; fixation of the tumor to the chest wall; large, matted or fixed axillary nodes; or some degree of combination of these findings.

If the local findings indicate inoperability the only justification for operation is to eliminate an ulcerating, discharging lesion or one in which ulceration is impending and there has been no response to other therapy. In these circumstances palliative removal is warranted.

#### CHOICE OF OPERATION

Operation offers the greatest hope of cure or long arrest of the disease. The important decision is to choose the operation which provides the best prognosis. All other considerations are secondary.

One must review the evidence as to the value of simple mastectomy compared with radical or extended radical mastectomy. It is obvious, at once, that if the disease were confined to the breast any of these procedures would eradicate it.

Simple mastectomy, as usually performed, is actually a partial mastectomy. The surface anatomical variations in the distribution of breast tissue are well known. In addition breast tissue may penetrate

\*To be reproduced in the completed "Cancer Studies" as Appendix #1. Copies obtainable from Committee on Cancer, 693 Sutter Street, San Francisco.



the pectoral fascia and be found in the underlying muscle. The tail of the breast may ascend high in the axilla. It is difficult to know when all breast tissue has been removed. Carcinoma has occurred in residual breast tissue after a supposed simple mastectomy for benign disease.

The most apparent limitation of simple mastectomy is that it does not remove the axillary nodes. These are the most common sites of metastasis.

Simple mastectomy followed by heavy irradiation as practiced by McWhirter is often cited as being equal to or producing better results than radical mastectomy. McWhirter has had a 42 per cent crude five-year survival rate.<sup>28</sup> Data of the California Tumor Registry for five-year observed survival 1942-1946 show 45.1 per cent for all stages and 67.3 per cent for localized disease. Corresponding rates for 1952-1956 are 51.2 per cent and 73.2 per cent respectively. Figures from the Connecticut Cancer Registry are similar. The difference is about 1 per cent. These figures are based almost entirely on radical mastectomy. The number of hospitals and the large number of surgeons included remove these statistics from the realm of "selected" series.

A reconfirmation study done on the 1942-1948 California cases established the accuracy of diagnosis as being at least 95.6 per cent. This study was carried out because the accuracy of diagnosis was questioned.<sup>25</sup>

The long time survival rates as computed from California Tumor Registry data are of great interest.<sup>26</sup> They are as follows:

	5 Years	10 Years	15 Years
All stages .....	49.7	32.0	22.5
Localized .....	72.1	51.4	38.1

The ten-year survival rate in McWhirter's series was 25 per cent for all stages.

When adjusted for normal life expectancy on the basis of the age distribution for females, the California figures show:

	5 Years	10 Years	15 Years
All stages .....	56.1	41.4	34.1
Localized .....	81.3	66.6	58.0

The Cancer Prognosis Manual<sup>20</sup> reports 17,926 cases treated by radical mastectomy alone with five and ten-year survival rates of 53.3 per cent and 35.3 per cent respectively. Many "selected" series show higher rates. The figures in the Manual for survival rates following simple mastectomy and irradiation are 44.9 per cent and 20.3 per cent at five and ten years.

Butcher, in a study of the material at the Barnes Hospital and Ellis Fischel Cancer Hospital, using the Tornberg classification and the probit method, reached the conclusion that about 75 per cent of

the patients would have been as well treated by simple mastectomy as by radical mastectomy but in the remaining 25 per cent the radical operation was superior.<sup>5</sup> This is a retrospective study based on information secured by operation. Unfortunately there are no criteria for applying it to operable cases in planning therapy.

One Danish series of alternate selections for extended radical operation of the Dahl-Iverson type and for simple mastectomy and irradiation showing substantially the same results by both methods has been reported.<sup>22,23</sup> There were about 250 cases in each group followed by three years. One hundred and eighty-two patients in each category were followed for five years. In such small series a few good or bad prognosis patients in either group could materially alter the results. There are other factors raising questions concerning the validity of drawing conclusions from this series.

It is difficult to compare different series from separate sources but one must conclude that the preponderance of evidence is on the side of the superiority of radical mastectomy in treatment of cancer of the breast. Aside from statistics is the fact that most surgeons of long experience have a number of patients free from demonstrable disease who had axillary metastasis—and in some cases extensive involvement—at the time of radical operation 15 to 25 years before. It is scarcely reasonable to assume that the same would have been true if simple mastectomy with or without irradiation had been employed.

If the operation is properly done, the difficulties following radical mastectomy are far less than investigators suggest. Some lymphedema occurs fairly frequently but it is rare for it to be severe. The degree of deformity is only slightly greater than that of simple mastectomy and no greater under clothing. The mortality rate at this time and under proper conditions is a small fraction of 1 per cent. The rate of complications is no greater than that of heavy irradiation and probably less.

The extension of radical mastectomy to include the internal mammary nodes in cases of central and medial lesions and those with axillary metastasis has been estimated by Urban to improve five-year survival by 10 per cent. There are a number of procedures designed to remove these nodes in continuity or separately. All add to the extent of the operation. For final evaluation these procedures must be more widely applied and over a longer period. This should be done in hospitals where adequate house staff is available and good follow-up can be carried out. This is a logical procedure based upon the known primary zones of spread of cancer of the breast. It is unlikely that the more extended procedures involving removal of the supraclavicular

lar or deep mediastinal nodes will improve results. If these nodes are involved it is reasonable to expect that there has been further spread of disease.

Simple mastectomy has limited value in the curative attack upon operable cancer of the breast. It is useful when a patient's general health or physiological age contraindicate a more extensive procedure. Chronological age alone is not a contraindication to radical mastectomy. Simple mastectomy or partial mastectomy is excellent for palliation when this is required.

#### RADICAL MASTECTOMY

After the wound of biopsy has been sealed and the patient reprepared and redraped, operation may proceed. It is wise to have two units of blood available.

The reader is referred to standard texts for the details of the operation. Volumes on surgery and particularly the more recent books on the breast present these in satisfactory fashion.

Many incisions have been designed for radical mastectomy. The placing and the nature of the incision are determined by the site of the lesion and the configuration of the patient. There is no reason to extend the incision to the arm where it leaves a visible and unsightly scar. Adequate exposure can be obtained by incisions which will be hidden by normal clothing.

The incision should be 7.5 cm or more from the lesion. It should be made without reference to subsequent closure. If the wound can be closed without tension, primary closure is desirable. Tension on the flaps jeopardizes the already doubtful blood supply to the margins. Plastic procedures to obtain closure further jeopardize it. If the wound cannot be closed easily the flaps should be sutured to the chest wall without tension and the residual defect covered by a split thickness skin graft taken from the thigh or abdomen.

Cases of implantation of tumor cells in the donor site have been reported. Fresh gloves, gowns and instruments should be used in taking the graft. If one is certain in advance that a graft will be necessary it can be taken before the operation and kept moist with sponges soaked in normal saline solution.

The flaps reflected should be so thin that practically no fat is left attached to them. In this way fewer of the superficial lymphatic channels are severed and there is less hazard of leaving cancer cells in the wound.

The skin should be fixed high in the axilla to obliterate dead space. A soft catheter with multiple openings placed in the axilla and attached to low pressure suction is helpful in removing blood and

lymph and encourages early adherence of the flaps to the chest wall.

Throughout the operation gentleness is essential. A maximum of sharp dissection and a minimum of manipulation of the breast and traumatic gauze dissection should be employed.

A properly performed radical mastectomy should leave the patient with full function of the corresponding upper extremity. Some lymphedema is fairly frequent but it is rarely of serious extent.

#### ADJUVANT CHEMOTHERAPY

The Surgical Adjuvant Breast Project has now issued Progress Report No. 15. The treated group was given thiotepea 0.8 mg per kilogram of body weight in divided doses (0.4 mg per kilogram on the day of operation and 0.2 mg per kilogram on each of the two succeeding days). The recurrence rate for the treated group with positive nodes was 29.5 per cent as compared with 39.5 per cent for the controls. The greatest advantage lies in premenopausal women with positive nodes. This is the only group in which the Committee advises the use of thiotepea. The results in this group are so favorable that it is doubtful that subsequent follow-up will change their purport.<sup>30</sup>

Other studies are in progress. When they are reported one will be able to judge what additional help we may obtain by systemic chemotherapy.

Local wound chemotherapy has been under investigation. It must be considered experimental at this time.<sup>6</sup>

#### OOPHORECTOMY

Oophorectomy in advanced and recurrent carcinoma of the breast has been established as a procedure of value in premenopausal, menopausal and early postmenopausal patients.<sup>37</sup> Its value in the treatment of patients with presumably curable carcinoma as a prophylactic procedure does not rest on as firm ground.

There are those who advocate it in all premenopausal women. Some surgeons apply it only when axillary metastasis has occurred, and some not at all. Some have extended it to include postmenopausal women to age 70 because of the incidence of cortical stromal hyperplasia.<sup>35</sup>

Several series indicate that ovarian suppression in premenopausal, menopausal and early postmenopausal women has prophylactic value.<sup>33,27</sup> It has been our custom to employ it in this group of patients.

It appears to be a logical procedure. Women in this age group must be presumed to have estrogen-influenced carcinoma.<sup>21</sup>



There is a conflict of opinion relative to the effectiveness of irradiation compared with surgical removal in suppressing ovarian function. It is stated by some investigators that the procedures are equally effective.<sup>24</sup> Others maintain that oophorectomy is superior.<sup>4,15</sup> Both conclusions are based in part on estrogen assay. With radiation there may be a delay of several months before estrogen suppression occurs. The effect of extirpation is almost immediate.

#### PALLIATIVE TREATMENT

The limited role of surgery of the breast in inoperable cases has been mentioned. Other procedures have broader application.

*Irradiation.* Major reliance is placed upon irradiation of the breast, axilla, internal mammary and supraclavicular areas in inoperable cancer of the breast. The primary tumor may shrink and ulcerated areas heal following irradiation. Local recurrence may disappear. The pain of bony metastasis usually is relieved and lytic areas may recalcify. There is wide variation in the degree and duration of favorable response. There are no reliable prognostic criteria. Sensitivity to irradiation can be determined only by therapeutic trial.

There are differences of opinion concerning the relative merits of orthovoltage and supervoltage therapy. It seems probable that one may be preferred under certain circumstances and the other in different circumstances.

Except for the treatment of individual lesions by irradiation in disseminated disease, additive or ablative, hormone therapy and chemotherapy provide better prospect of relief. Combinations of some or all these methods may well be employed simultaneously or in sequence. Sequential application is preferred in most instances.<sup>2</sup>

*Additive Hormone Therapy.* The use of estrogen in the treatment of women who are five years or more beyond the menopause and have metastatic or disseminated disease, provides reasonable prospect of relief. This therapy is most effective in soft part and pulmonary lesions. Treatment should be continued until progression of the disease can be demonstrated.

Androgens are more effective in postmenopausal than in younger women, but are used to advantage in the younger age group. In the case of skeletal lesions subjective relief may be obtained in the absence of evidence of objective improvement.

Adrenal corticoid therapy is useful in combatting the hypercalcemia of bony metastasis and may be more effective in treatment of some cases of visceral metastasis than estrogens and androgens. The claim of prolonged remissions when used early in disseminated disease requires confirmation.

The mechanism of action of the hormones is not understood. All have disadvantages. Those of estrogenic therapy are less than those of androgens and corticoids. Androgens have masculinizing properties although some of the more recent products have little or no masculinizing effect. The corticoids produce osteoporosis and other side effects. Progesterone preparations have been reported to produce significant remissions. These are devoid of estrogenic and androgenic properties.<sup>18</sup>

*Ablative Hormone Therapy.* Oophorectomy has been discussed. The prognosis in adrenalectomy resembles that of hypophysectomy in all respects. The mortality rates of about 5 per cent are identical. Objective improvement judged by rigid standards is subsequently equal, being about 30 per cent. Patients who respond favorably to either procedure live three times as long as those who do not—20 to 22 months compared with 6 to 7 months.

There is some evidence that the time interval between primary operation and recurrence is important with regard to the degree and duration of response to hormonal therapy. The longer the interval, the greater the likelihood of protracted response. The most favorable results may be obtained when the original operation was performed before the menopause and the recurrence became apparent after the menopause.

In general, no clear-cut prognostic criteria exist. The best indication of a probable response is a previous remission of three months or more following oophorectomy. There is some evidence that oophorectomy and hypophysectomy in sequence are more effective than if performed simultaneously.<sup>26,27</sup>

*Chemotherapy.* In addition to the use as surgical adjuvants, chemotherapeutic agents have value in the treatment of disseminated disease. Alkylating agents are as effective as radioactive isotopes in controlling pleural effusions caused by metastatic carcinoma. Some of the alkylating and antimetabolic compounds, especially the fluorinated pyrimidines and their derivatives, used systemically produce improvement in a substantial proportion of cases.<sup>18</sup>

These agents may be used alone or in conjunction with irradiation. It is reported that lower doses of both modalities are effective when the two are used simultaneously.<sup>15</sup>

All the chemical agents now employed are toxic. The bone marrow and the epithelium of the gastrointestinal tract are particularly susceptible to injury. Patients must be closely observed for evidence of toxicity and the drugs carefully administered by those who are familiar with their potentialities and hazards.<sup>18</sup>

*Summary.* Disseminated cancer of the breast is incurable but proper use of irradiation, additive and

ablative hormone therapy and chemical agents alone, in combinations or in sequence can induce objective and subjective improvement. They can prolong life to a limited extent and make it much more pleasant for those patients who respond. Occasionally the improvement is dramatic.

#### CONCLUSIONS

1. Any dominant lump, any mass differing from other masses and any localized thickening not found elsewhere in the breast must be considered to be cancer until proved otherwise.

2. Diagnosis must be established by biopsy and microscopic examination of representative tissue. Biopsy is a prerequisite to definitive therapy.

3. The most important factor in prognosis is the stage of the disease at the time of operation.

4. Surgical operation offers the patient with an operable lesion the best and perhaps the only chance of cure. The most widely applicable surgical procedure is the standard radical mastectomy and it offers the patient the best chance for cure or protracted arrest of the disease. Extension of the operation to include the internal mammary nodes is justified in certain cases. Simple mastectomy has very limited usefulness in curative efforts.

5. Prophylactic elimination of ovarian function is desirable in premenopausal, menopausal and early postmenopausal women. Oophorectomy has some advantages over ovarian suppression by irradiation.

6. Postoperative irradiation probably has value when axillary metastasis is present.

7. Irradiation is the best means of therapy for inoperable disease, local recurrence and bone metastasis.

8. Additive and ablative hormone therapy are of value when properly applied to patients with disseminated disease. Chemotherapy is useful but must be applied with extreme caution.

9. Every patient deserves kindly, understanding care and the benefit of palliative measures offering a reasonable prospect of relief.

10. There remain many unanswered questions in the problem of cancer of the breast. One must maintain an open mind and adjust his attitude toward therapy as research provides us with new information.

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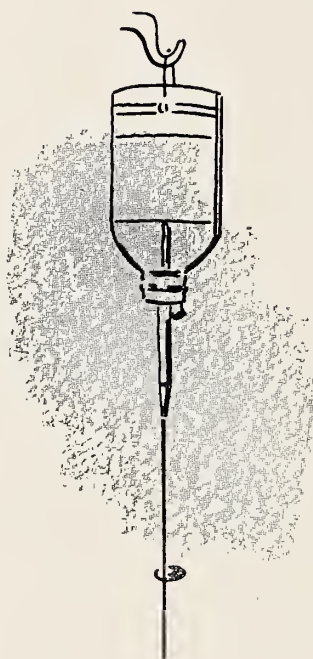
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# **The Lymphomas**

**EDWARD A. LANGDON, M.D., Los Angeles**

LYMPHOMAS (lymphoblastomas) are neoplasms that have as their cellular origin or are composed of any of the cells normally making up lymphatic tissue in any organ of the body. Classifications of these tumors based upon the histologic pattern of the lesion are often overly complicated and confusing. This is because of the frequent and striking variation of distinct types within a single neoplastic entity. This suggests that the simplest and most workable classification should be based upon the common cell types encountered within the specific tumor. Since all lymphatic tissues have their origin in a common mesenchymal stem cell, it is not unusual to see a transition from one apparently distinct type to another.

From the standpoint of therapy planning, there are four separate groupings exhibiting sufficiently different clinical and pathological characteristics to permit cataloguing them as different clinical entities: (1) Lymphosarcoma, (2) Reticulum cell sarcoma, (3) Giant follicular lymphoma, and (4) Hodgkin's disease.

### **Lymphosarcoma**

Lymphosarcoma is a malignant, invasive tumor composed primarily of lymphoblasts or lymphocytes. The vast majority of these tumors of the soft tissue arise in lymph nodes. It has been stated that the clinical evidence of soft tissue tumor or anatomical evidence of localized invasive growth is necessary to identify a lesion composed of lymphocytes and lymphoblasts as a lymphosarcoma. The majority of these lesions have a focal origin.

Clinically, the disease presents itself either with symptomless adenopathy or with symptomatic visceral involvement. It is of statistical interest that the disease affects men more than women and is more common in the age groups of 40 years and beyond. Only 5 to 6 per cent of patients are 15 years of age or younger. Although the tumor may arise in any lymphoid tissue, the common finding of mediastinal and retroperitoneal node involvement makes it important to recognize these sites of predilection. It should be remembered that a significant

number of patients with lymphosarcoma, particularly children, will have lymphocytic or lymphoblastic leukemia.

### **Reticulum Cell Sarcoma**

Reticulum cell sarcoma arises at almost any site, including bone and the central nervous system. The lymphoid tissue of the gastrointestinal tract (particularly that of the stomach and small intestine) and the retroperitoneal nodes are considered the most frequent primary sites of origin. Histologically the tumor may resemble an anaplastic carcinoma or a lymphosarcoma. Precise differentiation can be made by using special silver stains for the demonstration of reticula.

This disease usually develops in elderly patients of either sex. Reticulum cell sarcoma of the bone, however, is often found in children and young adults. Usually the disease progresses to involve other node sites, the liver and the spleen.

### **Giant Follicular Lymphoma**

Giant follicular lymphoma is made up of a proliferation of lymphoblasts and reticulum cells with lymphoid follicles. It is probably the most unpredictable of the lymphomas and is primarily a disease of the elderly and middle aged. The sites of first identification are predominantly the cervical or inguinal nodes. During the course of the disease other lymph nodes, the bone marrow, the spleen and the liver may become involved. It is generally felt that giant follicular lymphoma rarely retains its identity throughout the entire course of disease. Although it seems rare that histologically this lesion changes eventually into Hodgkin's disease, in most patients transformation to reticulum cell sarcoma or to lymphosarcoma occurs eventually. A leukemic state may also develop in some patients.

### **Hodgkin's Disease**

The lesions of Hodgkin's disease have varied histological patterns. A diagnosis of this specific entity without the presence of the Sternberg-Reed giant cells should be accepted only with extreme caution. Hodgkin's disease is seen more commonly in men, and although it may occur at any age, it

To appear as part of the revised Cancer Studies.



is rare before adolescence. Involvement of practically every organ of the body has been reported.

As with the other lymphomas, the clinical course of the disease will vary greatly from one patient to another. It is also common for two persons with clinically the same extension of the disease to have entirely different symptoms. Even with generalized lymphadenopathy, some patients will remain asymptomatic while others will be extremely ill. It is also true that patients with little gross clinical evidence of disease can present themselves in a state of severe toxicity, with elevated temperature, anorexia, weight loss, night sweats, profound weakness, severe pleuritis and anemia. Prognosis, particularly in this specific histological type of lymphoma, is difficult and hazardous. Occasionally patients with very generalized disease early in its course show pronounced improvement after therapy and apparently have prolonged periods of regression. Others may die within a few months after the initial manifestations of the disease whether it be localized or generalized and regardless of the intensity and variety of therapeutic procedures used.

#### CLINICAL OBSERVATIONS OF LYMPHOMAS

In evaluating a patient suspected of having one of the lymphomata it is important to bear in mind that the clinical manifestations will often mimic those of other diseases, such as bone tumors, simple goiter, hyperthyroidism or thyroid cancer, sarcoidosis, aneurysm and histoplasmosis. Because of the common presenting sign of asymptomatic and persistent lymph node enlargement, any of the diseases which precipitate inflammatory lymphadenopathy can confuse a definitive diagnosis.

Among the complications of lymphomas are anemia, neurologic involvement, intestinal obstruction, pleural effusion, ascites, hypersplenism and herpes zoster. Because of the unpredictability of the course of the disease in many patients, it is frequently hazardous, particularly from a prognostic standpoint, to classify patients according to clinical stages. However, the extent of clinical involvement frequently helps the physician decide upon the primary mode of therapy, and therefore it should be considered.

In the first group (Stage I) are persons in whom the disease is at least grossly limited to one anatomical site and who have no systemic symptoms or signs suggesting probable dissemination. In Stage II the disease is not limited to one anatomical region but instead involves two adjacent regions. Such patients can have constitutional symptoms. The third group, Stage III, includes patients with obvious dissemination of the disease. These patients can have diffuse lymphadenopathy without systemic

symptoms, or can have hidden adenopathy or visceral involvement with severe constitutional symptoms.

As with other malignant diseases, definitive diagnosis depends upon adequate biopsy. Removal of the persistent and the enlarging superficial node for this purpose does not in itself require complicated surgical procedures. However, if indeed a choice can be made, care should be taken in selecting the site of biopsy. As a rule, inguinal lymph nodes should be avoided because they commonly show chronic inflammatory changes which could be of such magnitude as to make the node unsuitable for diagnostic purposes. Again, if a choice of nodes is available to the diagnostic surgeon, it is preferable to select one of the larger nodes which usually offer a more representative picture of the disease process.

As with all biopsy specimens, excision and handling should be done with care lest compression or other trauma cause artifacts in the lymphoid tissues would make the material unfit for histological examination. The pathologist should have available to him not only the patient's history and physical findings, but also a record of the laboratory work, including serologic examinations, blood cell counts and a blood smear.

#### TREATMENT

There continues to be a considerable controversy relating to the vigor with which therapeutic methods should be instituted in relatively asymptomatic patients, with disease in an early stage. The multiplicity of therapeutic tools available, particularly since the advent of the widespread use of chemotherapeutic agents, also would seem at times to bring about differences of opinion as to primary treatment.

Of paramount importance in considering treatment for patients with lymphoma is the overall objective. The purpose of treating patients with lymphomas is not only to prolong life but to make the patient as comfortable and as useful as possible, even though almost all patients will eventually die of the disease. The treatment plan should be arrived at after careful deliberation and consultation. The general welfare of the patient should be the first concern. The physician should not only select the proper mode of primary treatment and outline in a general sort of way at the outset the plan for long term control, he should also take into consideration dietary, personal habits and environmental factors affecting the patient.

Certainly the patient should be encouraged to carry on his normal activities, and hospitalization should be reserved for acute episodes. Optimism,

and cooperation from the patient and the patient's family are necessary, particularly in anticipation of the months or years of remissions and relapses, changes in method of treatment and the probability of complications.

Antibiotic therapy is best reserved for bacteriologically identified infections; rarely if ever should it be used expectantly even in the presence of leukopenia. Symptomatic anemia severe enough to be troublesome should, of course, be corrected with blood transfusions.

For the patient with localized reasonably accessible lesions, radiation therapy should be instituted early and pursued with vigor. Localized manifestations that often respond well to radiation therapy are enlarged lymph nodes, tissue infiltration and bone lesions. Nowadays radical surgical operation in such cases is less often used than once it was, particularly in patients with giant follicular lymphoma or lymphosarcoma.

On the other hand, operation should be considered for patients with abdominal complications such as gastrointestinal hemorrhage or obstruction resulting from the neoplasm or from treatment.

When multiple areas are grossly involved, and only when the patient has apparent widespread disease without obvious gross clinical findings, chemotherapy is indicated. The alkylating agents have been shown to be effective in such cases and although there has been a tendency in recent years to use these agents earlier and more frequently, one must take into consideration the possibility of severe toxic side effects.

Stressing again the need for precise planning for each individual case, one should be aware of possible complications and the necessity for correcting these complications by the appropriate accepted therapeutic techniques. Some of the more troublesome of these complications include ulceration, bleeding, obstruction or perforation of the gastrointestinal tract, obstruction of the biliary tract or the urinary tract, and compression of the spinal cord. The latter has been reported to be particularly troublesome in Hodgkin's disease, the incidence having been put at from 10 to 15 per cent.

The steroids, judiciously used, may serve as an adjuvant to one of the other forms of therapy, but generally do not produce a true regression by themselves. Awareness of the possible dangers to the patient of indiscriminate use of the steroid medications must be stressed.

Even with our advancing knowledge regarding the group of malignant lesions included in the lymphoma classification, and even with our knowledge of new therapeutic means and of how to make more effective use of the present therapeutic techniques, the ultimate outcome still cannot be altered. There certainly is no doubt that modern measures have contributed much to the comfort and well-being of the afflicted patient even though prolongation of life is doubtful. It is the responsibility of the attending physician to assure himself, as well as the patient's family, that every reasonable therapeutic means has been utilized and that a vigorous and thoughtfully aggressive attitude has been present from the outset of consultation.

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# Tuberculosis in California Nursing Students

**HAROLD STOCKER, M.D., Oakland**

A SURVEY WAS CONDUCTED by mail to determine the incidence of tuberculosis among student nurses in the state of California.

It is generally considered that student nurses run a relatively high risk of pulmonary tuberculosis. From a survey conducted by mail to determine the incidence of this disease in student nurses in California it would appear that the risk is no greater for this group than for the population in general.

Questionnaires were sent to all schools of nursing in California, asking the following questions:

1. What was the average number of students in your school in each of the years, 1960-61, 1959-60, 1958-59, 1957-1958, and 1956-57?

2. How many new active cases of tuberculosis

were discovered among your student nurses in those years?

3. Was bacille Calmette Guerin (BCG) inoculation used in your school?

All schools completed and returned the questionnaire. Four schools of nursing were using BCG and the answers to other questions were as follows:

Year	No. of Schools	No. of Students	New Active Tuberculosis
1960-61 .....	51	5,171	1
1959-60 .....	47	4,679	1
1958-59 .....	46	4,220	3
1957-58 .....	37	3,639	0
1956-57 .....	33	3,458	2
TOTAL .....		21,167	7*

\*This incidence among student nurses (7:21,167) for the period was equivalent to 33 per 100,000, as against an average incidence of 38 per 100,000 in the general population of California for the years 1956-1961, according to data from the State Department of Public Health.

Kaiser Foundation School of Nursing, Oakland, California 94611.

Submitted August 16, 1963.

ON SEPTEMBER 20, 1963, the State Board of Health adopted proposed regulations banning the prescription, administration, sale or other distribution of certain cancer diagnostic and treatment agents except for scientifically conducted investigational use. This action was based on findings by the Cancer Advisory Council reported to the Director of the State Department of Public Health that these agents were without value in the diagnosis, treatment, alleviation or cure of cancer and recommendations that steps be taken to ban their general use. The regulations adopted by the State Board of Public Health provide for this ban and are now in effect. The following are the agents banned:

1. Bolen Test
2. Koch Synthetic Antitoxin
3. Lincoln Staphage Lysate
4. Mucorhycin
5. Beta-Cyanogenetic Glucosides ("Laetriles")

Similar action banning the Hoxsey cancer agent became effective on November 1, 1962.

# CASE REPORTS

## Fibrous Tumors of the Omentum

FRANK W. NORMAN, M.D., Santa Rosa

FIBROUS TUMORS of the omentum are not often diagnosed preoperatively. They may be noted at exploratory laparotomy but usually only incidentally unless they are part of an adhesive band producing bowel obstruction or their pedicles become twisted and cause infarction and abdominal pain. Although not rare, such tumors are considered uncommon enough to warrant this report.

### REPORT OF A CASE

A 48-year-old white stenographer sought medical advice because of constant low abdominal distress of 24 hours' duration. She had had no previous pain of this type. Her bowel habits were entirely normal and she had very little gas, bloating or indigestion before the onset of the constant low abdominal pain. There was no dysuria, urinary frequency, nausea or vomiting.

The patient had had appendectomy, cesarean section and removal of a fibroid tumor from the uterus eight years previously, subtotal hysterectomy six years previously and bilateral vein stripping and ligations five years previously. There had been no vaginal bleeding since the hysterectomy.

The patient's mother had died of carcinoma of the intestine, an aunt of heart disease, and her father had peptic ulcer.

The temperature was 101° F, respirations 20 per minute, the pulse rate 88 and blood pressure 130/82 mm of mercury.

No organs or masses were palpable in the abdomen. There were several vertical operative scars in the low midline. Pronounced tenderness was noted over the entire lower abdomen, with rebound and percussion tenderness especially under the surgical scars. Peristalsis was normal and active.

On pelvic examination, the cervical stump appeared to be slightly cyanotic and deviated to the right. Bimanual pressure revealed a firm cystic mass, well fixed, occupying most of the left ad-

nexal area but extending slightly to the right of the midline and displacing the cervical stump. The mass was extremely tender on movement and could be felt bimanually through the abdominal wall when it was located with the pelvic examining finger.

On rectal examination the mass was noted to protrude posteriorward into the cul-de-sac, compressing the rectum. Proctoscopic examination to a level 15 cm above the anus was done with ease and old brown feces were observed. The rectal mucosa appeared normal. A guaiac test on a fecal specimen was negative for blood.

As the pelvic mass was thought to be probably a twisted ovarian cyst, exploratory laparotomy and removal of the mass were recommended. The patient was put in hospital.

Leukocytes numbered 12,200 per cu mm with the cell differential within normal range. The hematocrit was 46 per cent and the corrected sedimentation rate (Wintrobe) was 38 mm in one hour. No abnormality was noted on urinalysis. On x-ray examination of the abdomen a slightly increased soft tissue density in the left pelvic area, compatible with a pelvic mass, was observed.

The abdomen was opened through incision at the midline where there was considerable scar tissue from previous operations. There was a small amount of serous fluid in the peritoneal cavity. The omentum was adhered to the anterior peritoneal wall. No abnormalities were noted on palpation of the abdominal organs. Five irregularly shaped ivory-like tumors about 2 cm in diameter dangled from the edge of the omentum on stalks from 1 to 2 cm long. They looked somewhat like the small tassels seen around the edge of a Mexican hat. The pelvis was then inspected and a dusky purplish mass was seen in the cul-de-sac. It was attached by thin and fibrinous adhesions to the salpinx, the ovaries and the small bowel. This incarcerated mass was attached to the omentum by a pedicle which had been twisted approximately eight times. The pedicle joined the edge of the omentum near one of the smaller masses (see Figure 1). The stalk was transected and the tumor was carefully dissected from the surrounding tissues. It was then apparent that

Submitted February 12, 1963.



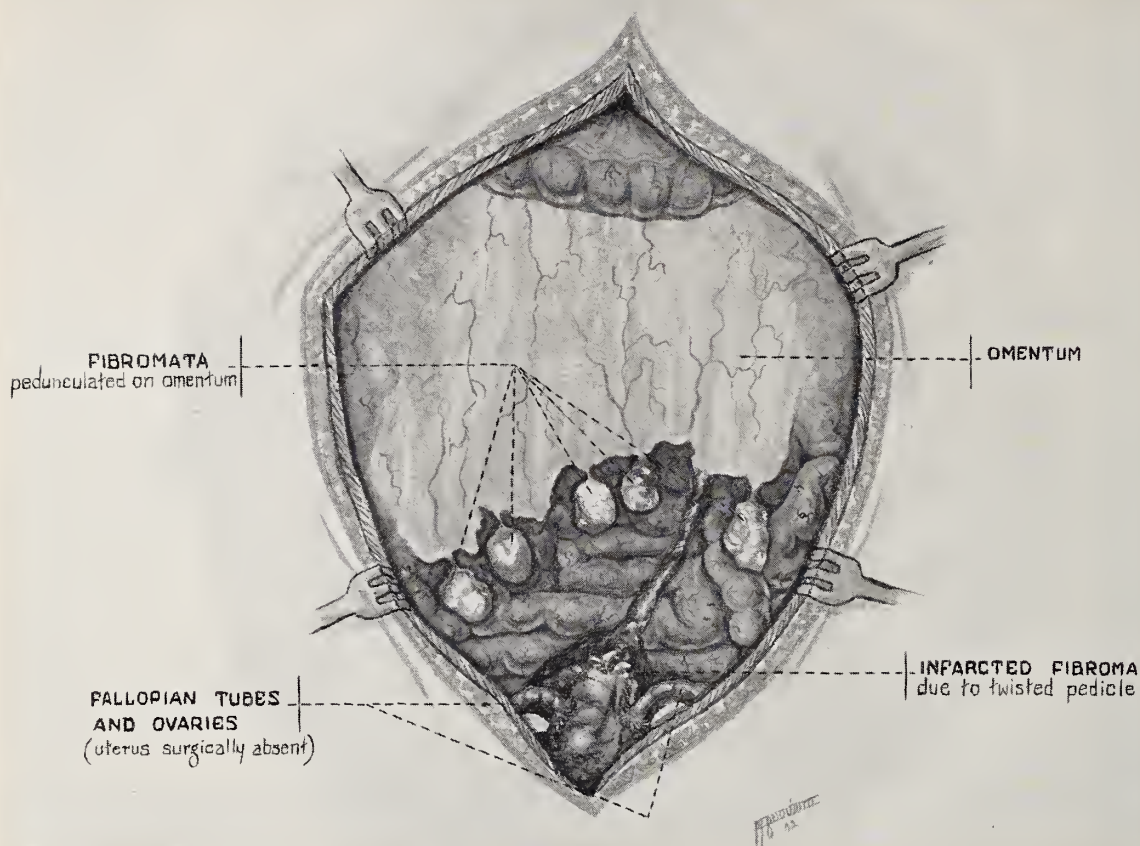


Figure 1.—A drawing showing the findings at laparotomy. Note the five ivory-like tumors hanging from the edge of the omentum, and the incarcerated large fibrous tumor on twisted pedicle adhered in the cul-de-sac.

it was a tumor of the omentum on a long pedicle which had become twisted and infarcted and had become adherent in the cul-de-sac. There were no lymph nodes present and all of the lesions inspected appeared grossly to be benign. All the tumors were removed and the pedicles ligated. When the large tumor, which was approximately 10 cm in diameter and well encapsulated, was cut open, it was observed to contain several loculated fluid spaces with degenerated fibrous tissue centers. The small tumors were transected and found to be somewhat gritty and fibrous. The abdomen was then closed and the patient recovered rapidly and remained well.

The pathologist reported:

The large tumor was a previously opened, dark brown nodular mass 9 centimeters in diameter which had a smooth surface. The cut surface showed what appeared to be a multilocular cyst space with a firm, gray area of tissue, 3.5 cm in diameter, centrally placed. Attached to one aspect of this nodule was a tail of tissue 6 cm long and varying in diameter from 1 to 0.4 cm and showing many twists. Also examined were five nodules of gray-white tissue with smooth surfaces, varying in diameter from

2.5 to 1.5 cm. Cut surfaces of these specimens were gray and slightly bulging. Microscopic examination of the sections from the multilocular portion of the large specimen showed hyalin degeneration and focal areas of hemorrhage throughout. The tumor appeared to be principally fibrous and not a tumor of adipose tissue. Tissue from the smaller specimens was of fibrous nature, the tumors being typical fibromas with interwoven bundles of fibrous tissue in which there were some vascular channels (See Figure 2). No abnormal proliferation was observed. From the clinical description the origin of these tumors would appear to be the omentum.

The pathologic diagnosis was: Fibrous tumors from omentum with extensive degeneration in the larger one.

#### DISCUSSION

Embryologically the omentum is composed of mesenchymal elements on its serosal surfaces, and sandwiched between these are blood vessels, nerves, lymphatic channels and fatty and connective tissues. Theoretically, then, abnormal growths of this organ could arise in any one or in combinations of these

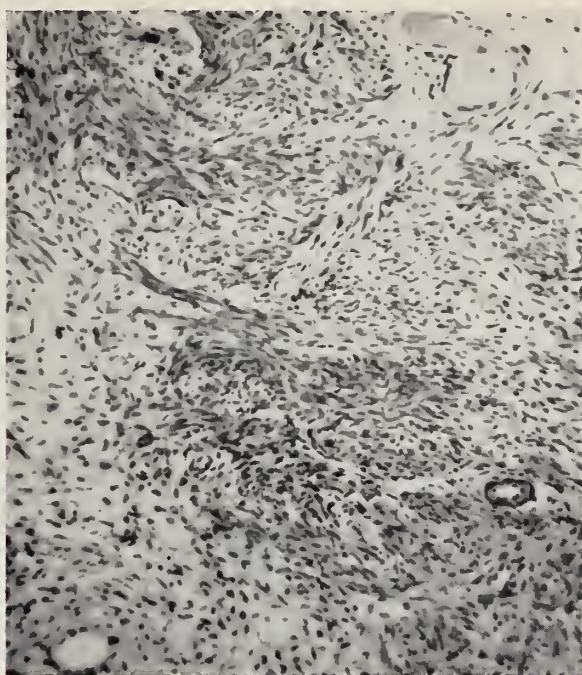


Figure 2.—*Left*, photomicrograph of a typical section through one of the fibrous tumors showing interwoven bundles of fibrous tissue with some vascular channels ( $\times 100$ ); *Right*, interwoven bundles of fibrocytes ( $\times 450$ ).

structures. Such, it would seem, is the case as evidenced by published reports of neurofibromas, fibromas, lymphangiomas, liposarcomas and angiomas originating in the omentum.

The very nature of the omentum makes it susceptible to trauma, infarction<sup>4</sup> and torsion<sup>3</sup> of its part and the literature contains many such reports.

Tumors of the omentum are more frequently reported in foreign than in English-language literature. Malignant tumors originating in the omentum are rare.

Smith<sup>6</sup> reported a case very similar to the one herein described and in a review of the literature noted how few reports there were of fibrous tumors of the omentum. Castleman,<sup>2</sup> presenting a case of neurofibroma of the greater omentum accompanied by diabetes mellitus, pointed out that certain tumors of this nature produce an insulin-like protein which may lower blood sugar levels.

In 1954 Ackerman<sup>1</sup> classified benign tumors of the omentum as: (1) Fibrous—local or diffuse, and (2) Papillary—local or diffuse. He noted that in a total of 56 cases of benign peritoneal and pleural tumors reported in the previous 32 years, only two were fibrous and these involved the pleura only.

Robb<sup>6</sup> reported a case of liposarcoma of the greater omentum and discussed the rarity of malignant tumors of fatty tissue in this area. In 1934 Ransom and Samson<sup>4</sup> reviewed 75 cases of primary tumors of the greater omentum and classified pre-

senting signs and symptoms in decreasing order of frequency as follows: abdominal pain, palpable tumor, ascites, weakness and loss of weight, abdominal distension, bowel irregularity, anemia.

#### SUMMARY

A case of multiple fibrous tumors arising from the greater omentum is reported. Such tumors are usually benign, are almost always an incidental finding at operation and are rarely diagnosed preoperatively. They are either asymptomatic or may produce symptoms of torsion of their pedicles or by involving themselves in adhesive processes to produce bowel obstruction or, in some instances, by producing ascites.

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## EDITORIAL

### An Outstanding Annual Session Program

IN ITS FIRST major effort the Committee on Scientific Assemblies of the California Medical Association's recently formed Scientific Board has strongly advanced two of the principal purposes for which the Board was organized. It has forged a program for the 1964 Annual Session of the California Medical Association that will at once put proper emphasis on the educational aspects of our organization and draw together the divergent interests of the various fields of medicine. The outstanding quality of the program surely will bring to it the attention it deserves; and the central theme—Immunology—is one that makes a meeting place for virtually all branches of medical thought and practice.

A listing of the program for the general meetings alone should arouse the interest of forward-looking physicians and make them turn their thoughts toward finding a way to attend the California Medical Association's Annual Meeting in Los Angeles, March 22 to 25.

#### FIRST GENERAL MEETING

Sunday, March 22

#### BIOLOGICAL BASIS OF IMMUNOLOGY

**2:00—The Thymus in Immunology**—ROBERT A. GOOD, M.D., American Legion Memorial Heart Research, *Professor of Pediatrics and Professor of Microbiology*, University of Minnesota Medical School, Minneapolis, by invitation.

#### 2:40—Panel Discussion—

*Moderator:* SIDNEY RAFFEL, M.D., *Professor and Executive, Department of Medical Microbiology*, Stanford University, Stanford, by invitation.

*Panelists:* RAY D. OWEN, Ph.D., *Chairman, Division of Biology*, California Institute of Technology, Pasadena, by invitation.

FRANK J. DIXON, M.D., *Head, Division of Experimental Pathology*, Scripps Clinic and Research Foundation, La Jolla, by invitation.

ROBERT A. GOOD, M.D., Minneapolis, by invitation.

**3:20—The Pathogenic Mechanisms Operative in Immunologic Reactions**—FRANK J. DIXON, M.D., La Jolla.

#### 4:00—Panel Discussion—

*Moderator:* H. HUGH FUDENBERG, M.D., *Associate Professor of Medicine*, School of Medicine, University of California, San Francisco, by invitation.

*Panelists:* DAN H. CAMPBELL, Ph.D., *Professor of Immunochemistry*, California Institute of Technology, Pasadena, by invitation.

FRANK J. DIXON, M.D., La Jolla.

ROBERT A. GOOD, M.D., Minneapolis.

#### SECOND GENERAL MEETING

Monday, March 23

#### TISSUE TRANSPLANTATION

#### 2:00—(Title of paper to be announced)

JONATHAN W. UHR, M.D., *Associate Professor of Medicine and Director*, Irvington House Institute for Rheumatic Fever and Allied Diseases, New York University School of Medicine, New York City, by invitation.

#### 2:40—Panel Discussion—

*Moderator:* WILLARD E. GOODWIN, M.D., *Professor of Surgery*, University of California School of Medicine, Los Angeles.

*Panelists:* CHARLES G. CRADDOCK, M.D., *Professor of Medicine*, University of California School of Medicine, Los Angeles.

JONATHAN W. UHR, M.D., New York City.

JOSEPH E. MURRAY, M.D., Boston.

**3:20—Mechanism of Action of Immunosuppressive Drug Therapy in Kidney Transplants**—JOSEPH E. MURRAY, M.D., *Assistant Clinical Professor of Surgery*, Harvard Medical School; and *Senior Associate in Plastic Surgery*, Peter Bent Brigham Hospital, Boston, by invitation.

#### 4:00—Panel Discussion—

*Moderator:* ERNEST JAWETZ, M.D., *Professor of Microbiology*, University of California School of Medicine, San Francisco.

*Panelists:* JOHN S. NAJARIAN, M.D., *Assistant Professor of Surgery*, Director of Research Laboratories, University of California School of Medicine, San Francisco, by invitation.

JONATHAN W. UHR, M.D., New York City.

JOSEPH E. MURRAY, M.D., Boston.

### THIRD GENERAL MEETING

Tuesday, March 24

#### CLINICAL IMPLICATIONS OF IMMUNOLOGY AND AUTOIMMUNITY

9:30—**Hormonal Influences on Antibody Synthesis and Allergic Phenomena**—THOMAS F. DOUGHERTY, Ph.D., *Professor and Head*, Department of Anatomy, and *Director of Radiobiology Laboratory*, University of Utah College of Medicine, Salt Lake, by invitation.

#### 10:10—Panel Discussion—

*Moderator:* HALSTED HOLMAN, M.D., *Professor of Medicine*, Stanford University School of Medicine, Palo Alto, by invitation.

*Panelists:* FRANCIS S. GREENSPAN, M.D., *Associate Professor of Medicine*, Associate Research Physician, University of California School of Medicine, San Francisco.

THOMAS F. DOUGHERTY, Ph.D., Salt Lake City.

DONALD G. MCKAY, M.D., New York City.

10:50—**Disseminated Intravascular Coagulation in Diseases of Hypersensitivity**—DONALD G. MCKAY, M.D., *Delafield Professor and Chairman*, Department of Pathology, College of Physicians and Surgeons of Columbia University, New York City, by invitation.

#### 11:30—Panel Discussion—

*Moderator:* VICTOR RICHARDS, M.D., *Chief of Surgery*, Presbyterian Medical Center, San Francisco.

*Panelists:* EDWARD R. ARQUILLA, M.D., *Associate Professor of Pathology*, University of California School of Medicine, Los Angeles, by invitation.

THOMAS F. DOUGHERTY, M.D., Salt Lake City.

DONALD G. MCKAY, M.D., New York City.

In addition to the General Meetings, the various Scientific Sections will hold their separate sessions, many of them calling upon the guest speakers to address these smaller gatherings.

The Committee on Scientific Assemblies and the Scientific Board deserve commendation by the membership of this Association for making this auspicious beginning of a most important work.

## Labels on Prescription Drugs

AT THE TURN of the century prescriptions were written in a dead language, in a dying system of measures, and with a general air of mystery. The Rx symbol could be read not only as "Take thou, pharmacist", but also as a threat from Jupiter.

The reasons for the traditional form and language are partly lost in the magic of the past. Latin was once the written language of learning, and hence of medicine. The patient probably understood it as little then as now. When vulgar language succeeded Latin in medicine, prescriptions continued to be written in Latin, mostly from habit and convenience, but partly because medical knowledge was still tinged with mysticism and there may have been supposed advantages in keeping the patient some-

what in awe of the unknown. In any case, when the prescription was exchanged for a bottle of medicine only some instructions on how to take it were translated to an English label.

Now we all live in a new drug age—physician and patient alike. Despite the general credulity as to what drugs will do, there are truly many new, effective agents and as their number increases the mysteries of therapy recede. Practice becomes more factual. More thought is given to exactness and meaning in naming drugs, more to the use of the simpler metric system for measurements, and to other items on prescriptions such as the provision of boxes to be checked if refills are permissible. Above all, the question is raised of labeling the final bottle to show what is in it.

The A.M.A.<sup>1</sup> and the C.M.A.<sup>2</sup> have both come to the conclusion that the fading of past customs in prescriptions is not improper and that positive advantages may lie in newer habits. Both favor in general, though obviously not invariably, a clear label on prescription drugs. In this there are advantages for both patient and physician.

Patients nowadays are educated and curious about drugs and often enjoy knowing what they are getting. This is generally accepted as being good by physicians also, although when placebos are used, or when the same drug in a different form or color is desired, some obscuring is required. Also, with such drugs as narcotics or barbiturates it may sometimes be too suggestive to indicate what is in the container. Patients often appreciate, further, the lessened chance of mixups between similar bottles when labels help to differentiate them.

More important, however, are the positive advantages to physicians who for many reasons may need to know what is in a prescription, or what the dose has been. It is sometimes perhaps only a matter of convenience to know what is in the prescription of a new patient. At other times such knowledge may be an urgent matter, affecting diagnosis or treatment critically, as in the case of a possible drug reaction or poisoning. In this day of peripatetic, many doctored patients and increased diagnostic possibilities, it is thus greatly to the advantage of the physician to have every accessible fact clearly before him.

The actions of the A.M.A. and C.M.A. to live progressively in the field of drug nomenclature, drug measurement, prescription writing, and now the labeling of drugs is applauded.

WINDSOR C. CUTTING, M.D.

#### REFERENCES

1. Editorial: Labeling of prescription drugs, J.A.M.A., 185:316, July 27, 1963.

2. Resolution No. 23, C.M.A. House of Delegates, Calif. Med., 99:43, July, 1963.

Prepared at the request of the Executive Committee of Scientific Board of the California Medical Association.



# California MEDICAL ASSOCIATION

## PROPOSED AMENDMENTS TO CONSTITUTION

Amendments to the Constitution of the California Medical Association are required to lie on the table for one year before being voted upon. Five proposed amendments to the Constitution were introduced in the 1963 House of Delegates. Under the terms of the Constitution, these were subject to review by the Reference Committee in the 1963 House of Delegates and will also be reviewed by Reference Committee No. 4 in the 1964 House before being voted upon in that session.

The following five Amendments to the Constitution were offered in 1963, all of them placed on the table for definitive action in 1964. (The new wording is in italics.)

### CONSTITUTIONAL AMENDMENT No. 1

Subject: Direct Election of All District Councilors  
Article III, Part B, Section 11

Author: John W. H. Sleeter

Representing: Los Angeles County

**Resolved:** That the Constitution of the C.M.A., Article III, Part B, Section 11, be amended to read as follows:

*"SECTION 11—Election of Councilors*

*"District councilors shall be elected by the vote of the members, entitled to vote, from each district, in the manner and at the time specified in the bylaws."*

and be it further

**Resolved:** That the bylaws of the C.M.A. be amended to provide for the election of district councilors in accordance with this Constitutional amendment.

### CONSTITUTIONAL AMENDMENT No. 2

Subject: Permit Councilor District Number Three to  
Define Sub-councilor Districts  
Article III, Part B, Section 10

Author: Walter H. Brignoli

Representing: Reference Committee No. 4

**Resolved:** That Article III, Part B, Section 10 of the Constitution of the California Medical Association be amended to provide that:

*"District Number Three, comprising the County of Los Angeles may define the geographic or other limits of the sub-councilor districts within the county, provided their bylaws specify that delegates and alternates shall be elected from the same sub-councilor districts."*

### CONSTITUTIONAL AMENDMENT No. 3

Subject: Direct Election of Councilors in Districts  
Wholly Contained within Boundaries of One  
Component Medical Society  
Article III, Part B, Section 11

Author: Joseph P. O'Connor

Representing: Los Angeles County

**Resolved:** That Article III, Part B, Section 11—Election of Councilors, be amended to read hereafter as follows:

*"District councilors shall be elected by vote of the delegates from each district, in the manner and at the time specified in the bylaws; provided, however, that in those councilor districts wholly contained within the boundaries of one Component Medical Society, district councilors may be elected by the vote of the members entitled to vote from such councilor or sub-councilor district, if the district be divided, in the manner and at the time specified in the bylaws; subject, however, that at the first meeting of the House of Delegates, after a district councilor has been elected, his name shall be submitted to the House, by the delegates from the district and (1) if there is no challenge by any*

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1515 N. Vermont Avenue, Los Angeles 90027 • 663-8071

delegate, then the speaker shall declare his election completed, and (2) if any delegate shall challenge the election on any ground, including fitness of the councilor to serve as a district councilor, the questions presented by the challenge, shall be submitted to a Qualifications Committee, consisting of the president, president-elect, and one delegate appointed by the speaker, from the councilor district or sub-district involved. The Qualifications Committee shall consider all grounds upon which the councilor is challenged, and report back to the House. If the committee reports in favor of confirming the councilor's election, the speaker shall declare him elected. If the committee reports against confirming the councilor's election, a three-fourths affirmative vote shall be necessary to sustain the report of the committee, in which event, the councilor shall be ineligible to serve as a district councilor, and the delegates or members from the district or sub-district shall immediately proceed to the election of another councilor for the vacant office. If an adverse report of the Qualifications Committee is not sustained, then the councilor shall be declared elected by the speaker."

#### CONSTITUTIONAL AMENDMENT No. 4

Subject: Permit District Number Three to Subdivide into the Same Number of Sub-councilor Districts as There Are Councilors and Elect Sub-councilors by the Membership  
Article III, Part B, Section 10

Author: Joseph P. O'Connor  
Representing: Los Angeles County

**Resolved:** That Article III, Part B, Section 10 of the California Medical Association Constitution,

wherein, it refers to District Number Three, be amended to read hereafter as follows:

"District Number Three, comprising the County of Los Angeles. *The members of District Number Three may, by a vote of the members entitled to vote, elect to divide District Number Three into the same number of sub-councilor districts as there are councilors. If the district is so divided, a councilor shall be elected by and represent the members of each sub-councilor district.*

#### CONSTITUTIONAL AMENDMENT No. 5

Subject: Permit Direct Election of Councilors in Councilor Districts Wholly Contained within the Boundaries of One Component Medical Society  
Article III, Part B, Section 11

Author: Joseph P. O'Connor  
Representing: Los Angeles County

**Resolved:** That Article III, Part B, Section 11—Election of Councilors—be amended to read hereafter as follows:

"District councilors shall be elected by vote of the delegates, from each district, in the manner and at the time specified in the bylaws; provided, however, *that in those councilor districts wholly contained within the boundaries of one Component Medical Society, district councilors may be elected by the vote of the members entitled to vote from such councilor or sub-councilor district, if the district be divided. At the first meeting of the House of Delegates, after a district councilor has been elected, his name shall be submitted to the House by the Delegates from the district or sub-district, and the speaker shall declare his election completed.*

### Information, Please

LILLIAN HSU—Female Chinese, 15 years of age; 5 feet 2 inches tall; 119 pounds plus; black hair, brown eyes; 8 months pregnant (14 Nov. 1963).

Has been missing from the Booth Memorial Hospital, Oakland, since 7 October 1963. Any information please forward to Oakland Police Department, Missing Persons Detail; Officer W Glavor, CRestview 3-3352.



# 1964 SCIENTIFIC ASSEMBLY

BILTMORE HOTEL

LOS ANGELES

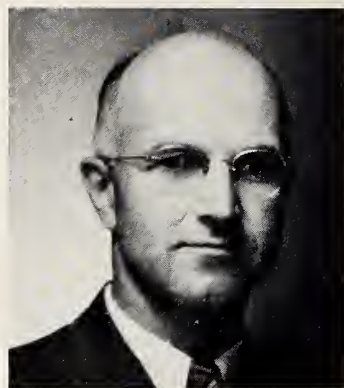
Sunday, March 22

Wednesday, March 25



**ROBERT A. GOOD, M.D.**

American Legion Memorial Heart Research Professor of Pediatrics and Professor of Microbiology, University of Minnesota Medical School, Minneapolis.



**JOSEPH E. MURRAY, M.D.**

Assistant Clinical Professor of Surgery, Harvard Medical School; and Senior Associate in Plastic Surgery, Peter Bent Brigham Hospital, Boston.



**DONALD G. MCKAY, M.D.**

Delafield Professor and Chairman, Department of Pathology, College of Physicians and Surgeons of Columbia University, New York City.



**FRANK J. DIXON, M.D.**

Head, Division of Experimental Pathology, Scripps Clinic & Research Foundation, La Jolla.



**JONATHAN W. UHR, M.D.**

Associate Professor of Medicine, New York University School of Medicine; and Director, Irvington House Institute for Rheumatic Fever and Allied Diseases, New York City.



**THOS. F. DOUGHERTY, Ph.D.**

Professor and Head, Department of Anatomy, and Director of Radiobiology Laboratory, University of Utah College of Medicine, Salt Lake City.

## General Theme: IMMUNOLOGY

### THREE GENERAL MEETINGS:

- Biological Basis of Immunology
- Tissue Transplantation
- Clinical Implications of Immunology and Autoimmunity

**MOTION PICTURE & CLOSED CIRCUIT TV SYMPOSIA • SPECIALTY SECTION MEETINGS**

# APPLICATION FOR HOTEL ACCOMMODATIONS

## 93<sup>rd</sup> Annual Session

CALIFORNIA MEDICAL  
ASSOCIATION

MARCH 22 to 25, 1964  
BILTMORE HOTEL  
LOS ANGELES

House of Delegates Opening Session  
Saturday evening, March 21; Scien-  
tific Programs begin Sunday morning,  
March 22.

### INFORMATION

1. Please fill in the form below **completely** for room accommodations at the CMA's 1964 Annual Session. There is only a limited number of rooms available. Your choice of accommodations will be better if your request is for rooms to be occupied by two or more persons.
2. Your reservation request should include the **definite date and hour** of your arrival and departure.
3. Reservations can only be held until 6:00 p.m.
4. All reservations must be made through the **CMA Housing Bureau, Department 34, 693 Sutter Street, San Francisco, California 94102.**
5. **DEADLINE** for housing: March 9, 1964.

### HOTEL ROOM RATES:

	Single	Twin	Suites
<b>BILTMORE HOTEL</b>			
515 So. Olive St.....	\$ 9.50-15.50	\$12.50-17.50	\$25.00-65.00
<b>MAYFLOWER HOTEL</b>			Corner Studio
535 So. Grand.....	\$ 7.50-10.00	\$10.00-14.00	\$12.00-14.00
<b>STATLER-HILTON</b>	Studio		Small Suite
930 Wilshire Blvd.....	\$10.00-16.50	\$16.00-20.50	\$28.00-31.00
			Large Suite
			\$34.00-41.00
<b>AMBASSADOR HOTEL</b>			
3400 Wilshire Blvd.			
Main Building .....	\$14.00-24.00	\$18.00-28.00	\$40.00-58.00
Garden Suites .....	\$22.00-34.00	\$24.00-36.00	\$54.00-66.00

California Medical Association—Housing Bureau, Department 34  
693 Sutter Street, San Francisco, California 94102

Please reserve the following accommodations for the 93rd Annual Session of the California Medical Association in Los Angeles, March 22-25, 1964. The first meeting of the House of Delegates begins Saturday evening, March 21; Scientific Programs begin March 22.

Single Room \$.....Twin-Bedded Room \$..... Other.....

Small Suite \$..... Large Suite \$..... Other.....

First Choice Hotel..... Second.....

Arrival (date).....Hour.....a.m.....p.m.....

Departure (date).....Hour.....a.m.....p.m.....

{ Hotel reservations only held  
until 6:00 p.m.

THE NAME OF EACH HOTEL GUEST MUST BE LISTED.\* Therefore, please include the names and addresses of both persons for each twin-bedded room requested; and names and addresses of all other persons for whom you are requesting reservations, and who will occupy the rooms asked for:

Individual Requesting Reservations—PLEASE PRINT OR TYPE:

Name:.....Are you a CMA Officer?.....Delegate?.....Alternate?.....

Address:.....County.....

City and State..... Zip No.....

\*Number of children attending.....Ages..... Do you wish planned activities for them? Yes..... No.....



## Handicapped Lungs

IN A CONCISE FASHION, the highlights of information pertaining to the pneumoconioses have been consolidated into a direct statement through the efforts of a committee of the American Medical Association Council on Occupational Health.

The fundamentals of history, diagnosis and management are presented from the current knowledge of a panel of experts. Directed to the general physician, this guide offers practical information on the subject of a relatively new and an increasingly encountered disease, as it is understood today.

For the welfare of the patient, accuracy in regard to diagnosis of pulmonary problems is obviously important and beneficial to the individual involved. Aside from the fact that proper preventive measures may decrease the incidence of such disease, proper knowledge of the physician may assist in preventing disablement of the patient when the diagnosis is made sufficiently early in the course of such conditions.

Since the initial presentation of this guide occurred in a specialty journal, *Archives of Environmental Health*, and probably was not seen by a major segment of the profession, your Committee believes it worthwhile to bring to the attention of the members its easy availability.

For your copy, write to the Council on Occupational Health, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois. Ask for "The Pneumoconioses—Diagnosis, Evaluation, and Management."

COMMITTEE ON OCCUPATIONAL HEALTH  
CALIFORNIA MEDICAL ASSOCIATION

## In Memoriam

BENNETTS, FREDERICK ALFRED (ALFORD), Los Angeles. Died October 28, 1963, in Apple Valley, aged 61, of heart disease. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1929. Licensed in California in 1929. Doctor Bennetts was a member of the Los Angeles County Medical Association.



CASPER, PHILIP CONRAD, Los Angeles. Died November 1, 1963, in Fullerton, aged 57, of cerebral vascular accident. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1931. Licensed in California in 1931. Doctor Casper was a member of the Los Angeles County Medical Association.



CASTLEN, CHARLES RUBY, La Canada. Died October 28, 1963, in Seattle, Washington, aged 77. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1909. Licensed in California in 1933. Doctor Castlen was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



CLATTENBURG, HERBERT A., Redwood City. Died October 14, 1963, in Redwood City, aged 72, of heart disease. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1919. Licensed in California in 1919. Doctor Clattenburg was a member of the San Mateo County Medical Society.



FISCHER, ROBERT GODFREY, Oroville. Died September 29, 1963, in San Francisco, aged 41, of acute leukemia. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1950. Licensed in California in 1950. Doctor Fischer was a member of the Butte-Glenn Medical Society.



GLENN, JOHN STUART, Exeter. Died October 14, 1963, in Exeter, aged 71. Graduate of the University of Alberta Faculty of Medicine, Edmonton, Alberta, Canada, 1925. Licensed in California in 1931. Doctor Glenn was a member of the Tulare County Medical Society.



GOLTHAMER, CHARLES RUDOLL, Van Nuys. Died November 4, 1963, in Van Nuys, aged 67, of cerebral hemorrhage. Graduate of Medizinische Fakultät der Universität, Wein, Austria, 1921. Licensed in California in 1945. Doctor Goltthamer was a member of the Los Angeles County Medical Association.



GOODMAN, HYMAN ABRAHAM, Beverly Hills. Died October 8, 1963, in Santa Monica, aged 46, of heart disease. Graduate of Wayne University College of Medicine, Detroit, Michigan, 1948. Licensed in California in 1949. Doctor Goodman was a member of the Los Angeles County Medical Association.



HARDISON, STEVEN DEE, Sacramento. Died October 19, 1963, in Concord, aged 45, of heart disease. Graduate of the University of Melbourne Faculty of Medicine, Australia, 1953. Licensed in California in 1955. Doctor Hardison was a member of Sacramento County Medical Society.



HENNINGER, LOUIS LEROY, Pasadena. Died November 2, 1963, in Pasadena, aged 88, of cerebral vascular accident. Graduate of the State University of Iowa College of Medicine, Iowa City, 1902. Licensed in California in 1917. Doctor Henninger was a member of the Los Angeles County Medical Association.

LARSON, AUGUST HAROLD, Los Angeles. Died October 15, 1963, in Los Angeles, aged 85, of coronary heart disease. Graduate of the American Medical Missionary College, Battle Creek, Michigan, and Chicago, Illinois, 1906. Licensed in California in 1914. Doctor Larson was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



McCLELLAND, EVERETT SLATER, Los Angeles. Died October 16, 1963, in Claremont, aged 89, of bronchopneumonia. Graduate of Rush Medical College, Chicago, Illinois, 1909. Licensed in California in 1912. Doctor McClelland was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.



MIDDLETON, J. MYRON, Beverly Hills. Died November 2, 1963, in Los Angeles, aged 50, of myocardial infarction. Graduate of the University of Michigan Medical School, Ann Arbor, 1937. Licensed in California in 1945. Doctor Middleton was a member of the Los Angeles County Medical Association.



RUBIN, HENRY H., Los Angeles. Died October 15, 1963, in Los Angeles, aged 63, of uremia. Graduate of the University of Illinois College of Medicine, Chicago, 1923. Licensed in California in 1948. Doctor Rubin was a member of the Los Angeles County Medical Association.



SLATER, WILFRED W., Long Beach. Died October 21, 1963, in Long Beach, aged 55. Graduate of the College of Osteopathic Physicians and Surgeons, Los Angeles, 1940. Licensed in California in 1940. M.D. degree from the California College of Medicine, 1962. Doctor Slater was a member of the Forty First Medical Society.



SMITH, CECIL J., Morse Mill, Missouri. Died October 9, 1963, in Morse Mill, Mo., aged 61. Graduate of the St. Louis University School of Medicine, Missouri, 1930. Licensed in California in 1931. Doctor Smith was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



SPIER, CHARLES A., Downey. Died October 18, 1963, in Los Angeles, aged 59. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1936. Licensed in California in 1937. Doctor Spier was a member of the Los Angeles County Medical Association.



TUTTLE, STEWART G., Los Angeles. Died October 23, 1963, in Bel Air, aged 39, of heart disease. Graduate of Cornell University Medical College, New York, 1949. Licensed in California in 1951. Doctor Tuttle was a member of the Los Angeles County Medical Association.



WILDER, EDWIN MILTON, Sacramento. Died October 7, 1963, in Sacramento, aged 91. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1900. Licensed in California in 1900. Doctor Wilder was a member of the Sacramento County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.



# PUBLIC HEALTH REPORT

**MALCOLM H. MERRILL, M.D., M.P.H.**

*Director, State Department of Public Health*

IT HAS BEEN BROUGHT to the attention of the State Health Department that the disposal of medical supplies in the form of unused or partially used drugs, used syringes and needles and other biological products is creating a health hazard when such refuse can be picked up by children and, possibly, by drug addicts.

One California community, Pico Rivera, already has enacted an ordinance to control accessibility to such materials by unauthorized persons. The control ordinance requires guarded incineration or disposal in a locked refuse can.

Other communities may follow the ordinance approach to the problem. Apparently anticipating questions on this point, the State Attorney General has requested a recommendation from this department as to the feasibility of a state statute covering the problem rather than a multiplicity of local ordinances.

While the State Health Department at this time has not submitted its views on the subject to the Attorney General, it is generally felt that good disposal practices by physicians, hospitals and other facilities where such materials are received would preclude the necessity for either state or local laws. However, continued careless disposal of such materials could result in the adoption of some type of control legislation.

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A "Clinical Handbook on Economic Poisons—Emergency Information for Treating Poisoning" can be obtained by physicians and hospitals in limited supply from C. O. Barnard of the Western Agricultural Chemicals Association, 2466 Kenwood Avenue, San Jose.

The handbook provides current information about the effects of and treatment for poisoning by pesticides used to any extent in California. However, before the handbook can be useful, the pesticide which may be causing the illness must be accurately identified. Proper identification is one of the major difficulties experienced by physicians

in cases where exposure to pesticides is a question, but is absolutely essential.

The best source of information is the label on the container. A list of ingredients must appear. Among the wide variety of different pesticides there are chemicals for which effective treatment can be life-saving. Other chemical poisonings can be treated only symptomatically. For one group of pesticides, phosphate esters, there is a laboratory test (cholinesterase activity) which will confirm the diagnosis and should always be carried out when pesticides in this group are suspected of causing illness.

For other pesticides there are unfortunately few or no tests available. Some chemicals can be life-threatening in small amounts; others are relatively innocuous. It is therefore most important first to properly identify the specific pesticide which may be causing the illness and then to consult the handbook as a guide to clinical effects and proper treatment.

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Predictions as to the extent of influenza during the coming season are difficult to make. It is assumed there will not be a major epidemic. This impression is founded upon previous experience in which epidemic influenza A has been observed to recur at two to three-year intervals and influenza B in four to six-year cycles.

However, because of the sparse experience in California in 1962-63 when the eastern and central portions of the United States experienced a heavy incidence, the possibility that the state may experience influenza outbreaks in the coming season must be kept in mind. The department fully concurs with the U. S. Surgeon General's recommendations regarding the use and administration of the new polyvalent vaccine in high-risk populations.

Low absenteeism in schools and industry indicates there is no significant influenza activity at present. Of 400 specimens submitted for examination since July 1, only two have been positive for influenza A, none for B.



# WOMAN'S AUXILIARY

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## TO THE CALIFORNIA MEDICAL ASSOCIATION

### Physicians' Benevolence

PHYSICIANS' BENEVOLENCE—YOUR FUND, financed by YOU, and to benefit YOU in case of unexpected need. California physicians and their families are indeed fortunate that the California Medical Association had the foresight 23 years ago to organize this committee. The fact that this project has continued to the present time is surely proof that the need exists.

Physicians' Benevolence—YOUR fund. Yes, it is your fund, for only California Physicians and their families are eligible to apply for aid. Applications for funds may be made through Mr. John Hunton, Executive Secretary of the California Medical Association. Investigation of the application is handled by the executive secretary or other officials of the applicant's county society. Often a physician or Auxiliary member who is most familiar with the problem can fill out the simple questionnaire. The information on the form is then forwarded to the operating committee for approval. This group of five dedicated doctors promptly evaluates every application. An authorization form on which the Committee Members express their opinions as to the amount of aid to be given, the period of time for such aid and any other suggestions they have to make. As soon as this authorization reaches the C.M.A. office, a check is immediately mailed. If the Committee feels that further inquiries should be made before the payment of funds is authorized, they are acting simply as the Trustees of funds provided by others. For this fund is not intended to furnish full maintenance for indefinite periods, but strives, rather, to supplement other sources of income. The maximum amount given is \$250.00 per month and each case is reviewed every four to six months as long as funds are needed.

Physicians' Benevolence—is financed by YOU. Every C.M.A. member contributes \$1.00 of his dues to this fund. Your County Auxiliary Members also contribute. Our goal of \$1.00 per member is raised by most counties each year. Investment returns, donations and "In Memoriam" gifts are other sources of income. The staff of the C.M.A. handles all operating details and the only cost of administration is a modest professional fee for auditing the books each year.

Physicians' Benevolence—benefits YOU—should you meet with unexpected reverses, illness or other catastrophes. Doctors are not immune to diseases—illness can come with or without warning and cut down the bread winner. Aid is needed, immediately, during the adjustment period, or temporarily until the doctor or a member of the family can again take over. It is interesting to note that the majority of recipients of aid are the wives or widows of physicians.

The Physicians' Benevolence Fund also contributes to the Los Angeles Physicians' Aid Association. The sum given represents only a small part of the total annual budget required by that organization to take care of the demand in Los Angeles County. Their case load is greater because many retired doctors and their families gravitate to that area from other parts of the State. This fact certainly indicates the necessity of extending assistance to the Los Angeles Physicians' Aid Association.

As Auxiliary Members, we join with you in support of this most worth while program for our own.

MRS. CLEON K. HUBBARD, *Chairman*  
*Physicians' Benevolence Woman's*  
*Auxiliary to the California Medical*  
*Association*



# INFORMATION

## Social Aspects of Medicine

*A Special Report by the Bureau of Research and Planning on Recent Literature on Social, Economic and Organizational Problems*

THE PAST FEW MONTHS have seen the appearance of a number of articles by physicians, behavioral scientists, and organizations, which concern themselves with the financing, provision, and organization of medical care. Some of the articles confine themselves to one or two topics of current interest; others deal with a wide spectrum of issues and developments. Most of them reflect a major recurring theme of dissatisfaction with the status, and/or with the progress that is being made.

The preoccupation of the physician with the scientific aspects of his profession frequently precludes many opportunities he may have to become aware of the issues being discussed in the stream of professional and lay publications which reflect the opinions, attitudes, and findings of the authors and which often also reflect the attitudes and philosophies of other groups in society who desire certain changes for social and economic reasons.

The purpose of this report is to call attention to a few of these recent articles and publications, and to acquaint physicians with their highlights. Regardless of the points of view expressed, or observations made, the mere fact of their publication and wide distribution among opinion leaders and sophisticated audiences reflects the increasing attention being given to issues with which most physicians are familiar and to approaches, avenues of inquiry, and suggested solutions, some of which constitute departures from current philosophies held by many physicians.

No significance should be attached to the order in which the following digests are presented other than to note that if most of them contain cautions, criticisms, and suggestions for change or improvement, their value lies in calling attention to the social forces at work which can ultimately affect, in one way or another, the practice of medicine and the delivery of medical care to the American people.

Jaco<sup>1</sup> discusses the social and organizational aspects of medical care and the attitudes of a sample of the American public toward the medical profession. While almost 9 out of 10 people are entirely satisfied with the care and treatment they receive from physicians; while more than 4 out

This report calls attention to several recent articles and publications which deal with the financing and organization of medical care in the United States. They contain discussions of issues and problems with which all physicians should be aware.

The California Medical Association, through its committees and commissions, has been actively engaged for some time in studying many of the problems to which the authors of the various articles refer. Among these committees are the Bureau of Research and Planning which has conducted several studies for use by the Association and its members. Another is the newly created Committee to Study the Role of Medicine in Society of the California Medical Education and Research Foundation.

of 5 people believe that their chances of having good health today are better than they were 30 years ago, and while the physician ranks highest in occupational prestige score among other professional persons, he cautions against overdue optimism "... if the symptoms of discontent spread and become malignant." He cites increasing demands of the American public and the organizational attempts to cope with them as factors to be considered. He also refers to the social and economic changes during the past century, and the emergence of the "affluent society" which

"... suggest a trend among certain components of American society to view medical care as a tangible *product* to be consumed and supplied on demand. Still other segments of the population may come to view good medical care as a 'right' along with other constitutional freedoms and guarantees."

While the attitudes of *all* segments of American society may not have changed significantly during the preceding decades. Jaco calls attention to the fact that the aged, the less educated, and the lower-income segments of the population "... exhibited the more divergent uses and attitudes toward medical care. . . ." One of his conclusions is that,

"All in all, it is likely that any changes in attitudes that the American people may have toward medical care are related to their changes in attitudes toward other components of American society and perhaps toward life itself."

He cites the need for further research and studies on changing attitudes and values in contemporary American society.

Hill<sup>2</sup> dissects the image of the American physician in an article which might well have been entitled, *The American Physician's Dilemma*, and concludes that the honeymoon is over between the public and the physicians, due to the impersonal nature of medical care induced by increasing

specialization and advanced technology. While recognizing the emphasis of organized medicine on scientific progress, and the acceptance of this role by the public, he is less optimistic of the public's views toward the profession's position on political, social, and economic issues. He devotes quite a bit of space to the methods of charges to the public and the type of physician-patient relationship which has evolved. Despite his attempts to explain the physician's attitudes, philosophy, and behavior, he concludes that while the public respects the medical profession, it does not love it, and that ". . . the problems of the American doctor are born, not of despair, but of progress."

Folsom<sup>3</sup> concerns himself with the problem of appraising tomorrow's health services on the basis of the community's recognized needs and resources. Manpower, medical education, medical research, utilization and cost of health facilities and services—all are touched upon in his search for assessment of future needs. He describes the study now being conducted by the National Commission on Community Health Services, under a grant from HEW, the Kellogg Foundation, and the McGregor Fund, to the American Public Health Association for a study which the APHA and the National Health Council are sponsoring. The study, which will involve organizations and physicians in a number of communities throughout the country, will also include in its task-force studies physicians and other community leaders from a wide range of organizations and interests. The study will culminate in a national conference the recommendations of which could have a significant impact upon future community planning and action. His philosophy can be summed up by his concluding remark:

"The wise use of our resources must be a concern of government at all levels and the private volunteer agencies and the individual citizen as well."

Mather<sup>4</sup> discusses the present and future role of the worker in public health and his interdependence with other disciplines if optimal health is to be provided the public. He summarizes his thesis by stating:

"He is a member of a complex team not only within his own organization but within the larger community. He has much to contribute through his own efforts and by his leadership. His role is changing and will continue to change. With vision, imagination, determination, industry, cooperation, judgment and adaptability he can ensure that the discipline of public health attains full maturity and, in so doing, serve his people best."

The article discusses the enlarging horizons of

public health, its greater involvement with personal health services, and a more dynamic role as part of the health team. Although the article attempts to examine the role of the person in public health in Canada, it draws upon American developments and thought, and poses questions for future resolution.

The Statement on Hospitals<sup>5</sup> by Labor's executive council is more than the title implies. It is, rather, a platform of position and action which reflects dissatisfaction with today's health care services, and recommends broad proposals for community and legislative action. It proposes various planning and organizational steps which affect hospitals as well as the organizational form of medical practice. Among some of the topics discussed are: hospital planning, quality of medical care, direct service and full payment plans, comprehensive medical services, prepaid group practice, and health care costs—ending in a recommendation for the AFL-CIO to establish a national Medical Advisory Committee.

Davis<sup>6</sup> touches upon several of the issues discussed by the other authors, and adds some more to them. He raises two points which are of special interest. One of these which deals with the relationship of the physician in private practice to the hospital declares that,

". . . the typical American general hospital, a non-profit, non-governmental institution, has become a place provided by the community for the private practice on bed cases . . . how many physicians are conscious of this gift and of its implied obligations?"

The second point is his recommendation for a national Committee of Physicians for Progress in Medical Care which would operate under the auspices of "an existing nationwide, non-political body" for the purpose of defining the goals of adequate medical care, its quality, and organization, and which would serve as a kind of body of arbitration on virtually any issue affecting medical care. The article is critical of the role of the A.M.A. While not in favor of a "universal scheme of governmentally organized and financed medical service," he favors ". . . 'by functional experimentation, some voluntary, some governmental' system of care to 'encourage and guide experimentation.'"

Peterson's<sup>7</sup> article has a subtitle which states that, "The revolution in medical science during the past three decades has brought great changes in the way medicine is practiced and is creating urgent problems in the organization of medical care."

The urgent problems he describes deal with the social and economic issues of medical care; the emphasis of the article is on the quality of care rendered, the supply and composition of physicians,



the competency of their performance, their organization into groups or into group practice with prepayment, and developments in hospital organization and staff relationships. He argues for the extension of group practice with prepayment and states that,

"The most intriguing unanswered question is why physicians, who are so concerned about government intervention in health insurance, have not tried to forestall it by imitating more widely the successful precedents established by their colleagues and nongovernmental lay institutions."

In addition to the preceding articles, the physician should also become familiar with other recent publications and articles which treat the issues referred to, and which contain the views of persons whose work or interests are closely identified with the health care services. They are:

Medicine and Society: The Annals of the American Academy of Political and Social Science, March 1963. Philadelphia (\$2.00).

Somers, Herman M., and Somers, Anne R.: Doctors, Patients, and Health Insurance. Doubleday Anchor (Paperback). 1963 (\$1.95).

Follmann, J. F., Jr.: Medical Care and Health Insurance, Richard D. Irwin, Inc., 1963. Homewood, Illinois (\$10.60).

Robins, R. B., Editor: The Environment of Medical Practice, Year Book Medical Publishers, Inc., Chicago, 1963 (\$6.50).

Medical Care and Family Security, Norway, England, U.S.A. Prentice-Hall, Inc., 1963. Englewood Cliffs, N. J. (\$6.50).

The Health Care Issues of the 1960's. The record of a national symposium. Group Health Insurance, Inc., 221 Park Avenue South, New York, 1963. (Paperback, no price indicated).

Lord Taylor: America's Medical Future, A Briton's View. The Nation, September 28, 1963.

Gamson, William, and Schuman, Howard: Some Undercurrents in the Prestige of Physicians, The American J. of Sociology, Jan., 1963, U. of Chicago Press. (\$1.75).

Government and Medicine in the United States (8 articles), Current History, August, 1963. (\$.85).

The series of eight articles in the August issue of *Current History* provides a broad overview of the health care issues being discussed on the national scene. They offer a distillation of the arguments and discussions dealing with the extent of governmental responsibility in this field.

. . . Odin Anderson, Ph.D., presents a sweeping historical perspective of this problem, noting that, "Our health services are now enormous strains as a result of their own success during the past 30 years." He argues against the measuring of the effectiveness of health services on the basis of mortality and morbidity rates, in favor of the extent to which, ". . . anxiety is relieved, pain alleviated, and the patient assisted in adjusting to disabilities . . . as one gets older."

. . . Professor William Carleton traces the chang-

ing relationships between the individual and the Federal Government. He notes that, "Historically . . . the entering wedge for direct individual medical help to civilians by the federal government came by way of aid to veterans of the armed services." He states that, ". . . there is a wide-spread belief that the veterans' hospitals represent too limited an experience from which to deduce valid conclusions about the operation of a general system of government medicine in the United States."

. . . Professor Roy Lubove deals lengthily with the origins of the demand for a national health program in the days of the New Deal, and the nature and the forms of opposition to a national health plan. One of the significant conclusions of his article is that, "In the final analysis, the A.M.A. position on the Wagner bill and its relationship generally to the evolution of a national health program were based less on considerations of economic advantages or, for that matter, the concrete medical needs of the nation, than upon more intangible fears concerning the freedom and status of the physician."

. . . Marion Folsom reviews the first decade of activity of the Department of Health, Education, and Welfare, of which he was formerly Secretary. He states that, "The function of the federal government is mainly one of leadership and stimulation, and overall action only in specific problems that can only be handled on a nationwide basis."

. . . Harry Becker reviews the history of prepayment and insurance programs, including group practice with prepayment plans, and declares that, "There is much that needs to be learned about the most economical ways to approach the problem of financing and organizing health care under prepayment arrangements." He asserts that, "The fate of voluntary health insurance . . . may well rest with Blue Cross . . . a public decision must be made . . . on the issue of how much support is to be given community-based non-profit plans, vis-à-vis other types of prepayment organizations."

. . . Wilbur Cohen argues for the social security approach to financing the health care of the aged, maintaining that, ". . . the individual would make contribution during his working years and receive hospital insurance protection in old age—a long step toward the prevention of dependency."

. . . Dr. Edward Annis argues against the position taken by Mr. Cohen by citing the accomplishments of the Kerr-Mills Law and stating that, "History shows that government control over health care is either the first step or one of the early steps toward government domination of all aspects of a people's life."

. . . Professor Seymour Harris discusses the British and American experiences and cites several

reasons why a national health insurance plan might be desirable or become an eventuality. He states that, although "... there is a case for national health insurance, (but) it is not nearly so strong a case as one could have made in the 1930s or the 1940s." Although he is not unsympathetic to the national health service in Great Britain, he refers to the great expansion of voluntary health insurance, the rising standard of living, and the capacity of the American people to increase their contributions for medical care as reasons for weakening the case for a national health insurance program in the United States.

California Medical Association, 693 Sutter Street, San Francisco, California 94102.

## REFERENCES

1. Jaco, E. G.: Medical care: Its social and organizational aspects, N.E.J.M., July 4, 1963, pp. 18-22. (This article is one of a series being published currently in the N.E.J.M.)
2. Hill, E.: Death of a legend in an era of miracles, The Saturday Evening Post, June 15, 1963.
3. Folsom, M. B.: Today's health needs and tomorrow's services, J. Pub. Health, June, 1963, pp. 863-870.
4. Mather, J. H.: Attainment of optimum health, Canadian Med. Assn. J., June 27, 1963, pp. 175-181.
5. Statement on Hospitals, AFL-CIO Executive Council, February, 1963, Washington, D. C.
6. Davis, M. M.: America Challenges Medicine, Lecture, Graduate School of Business, Univ. Chicago, May 23, 1963.
7. Peterson, O. L.: Medical care in the U. S., Scientific American, Aug. 1963, pp. 19-27.

## Enrollment Under the Federal Employees Health Benefits Program

*A Report of the Bureau of Research and Planning, California Medical Association*

As of June 30, 1962, a total of 5,755,000 active and retired Civil Service employees and their dependents were covered under the Health Benefits Program of the United States Civil Service Commission [enrollment within and without the United States was slightly over 5.8 million]. California had the largest enrollment with almost 609,000 or slightly over 10 per cent of all those covered.

Enrollment in the two government-wide plans for the United States was over 4½ million, with 3.2 million (71.1%) in the government-wide service plan and 1.3 million (28.9%) in the government-wide indemnity plan. In California almost 384,000 individuals were enrolled in these two plans; 212,000 (55.2%) in the service benefit plans and 172,000 (44.8%) in the indemnity plan.

Twelve employee organization plans had an enrollment of 889,000 in the United States and almost 63,000 (7.1%) in California.

National enrollment in 23 comprehensive medical plans (group practice and individual practice) was almost 343,000 of which 162,000 or 47 per cent were in California alone. Six of the 23 group and individual practice plans were in California.

Over 60 per cent of all persons enrolled in the United States and in California were in service type plans.

Source: U.S. Civil Service Commission, Bureau of Retirement and Insurance. U.S. Government Printing Office, 1963.

Active and retired federal employees, together with their dependents, represent the single largest group of persons enrolled in any voluntary health insurance program in the United States. The extent of their coverage and enrollment is of particular interest to physicians in California since this state has the largest proportion of all federal employees enrolled among all states.

Of the almost 5¼ million federal employees and their dependents, enrollment in California was almost 609,000 or slightly over 10 per cent of all those covered. Better than 3 out of 5 individuals covered were enrolled in service type plans both in the U.S. and in California. Of all persons enrolled in comprehensive group practice and individual practice plans in the U.S., almost one-half were in California alone.

Almost 4 out of 5 individuals enrolled were in high option plans. "... an indication that most employees were satisfied with their initial choice of plans."

The open enrollment season in October, 1961, which gave federal employees an opportunity to change plans or to move from one option to another resulted in a change of plan by only about 5.3 per cent of all federal employees. Of the 54,328 employees who changed plan options, only 2,426 (4.5%) selected the low option; 95 per cent moved from the low to the high option. The report from the Civil Service Commission states that this is "... an indication that most employees were satisfied with their initial choice of plans."

Of the 73,000 annuitants (dependents not included) under the retired federal employees health benefit program in the United States, 8,200 or slightly over 11 per cent are in California.

California Medical Association, 693 Sutter Street, San Francisco, California 94102.



# NEWS & NOTES

## NATIONAL • STATE • COUNTY

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### ALAMEDA

A new **Speech and Hearing Center** which will provide extended services to children with disorders in their ability to communicate opened at Children's Hospital of the East Bay October 1.

The center includes a group therapy room, individual therapy rooms, an observation room, a two-room testing suite for children with hearing problems, an office, a waiting room, a library, and a room for hearing aids and equipment.

### FORTY FIRST

The **Forty First Medical Society** has announced the election of Dr. Loron McGillis as president and Dr. Paul D. Yates as president-elect at its 59th annual convention which it held recently at Palm Springs.

### LOS ANGELES

Dr. George V. Webster, Pasadena, has been elected president-elect of the American Society of Plastic and Reconstructing Surgeons. Dr. Webster is a past president of the California Society of Plastic Surgeons and of the American Society for Surgery of the Hand.

### SAN DIEGO

Dr. Joseph Stokes, director of medical education at Queen's Hospital, has been **appointed dean of the proposed medical center** on the San Diego campus of the University of California.

A former member of the faculty of Harvard Medical School, the new dean will assume his new position January 1 and will immediately begin the recruitment of a faculty for the proposed new medical school, which will enroll its first freshman class probably in the fall of 1966.

\* \* \*

Dr. Francis E. West, San Diego, was elected president of the **State Board of Medical Examiners** at a recent meeting of the Board in Los Angeles, and Dr. Herman Weiss of Los Angeles was elected vice-president. Reelected to a third term as secretary-treasurer was Dr. Raymond M. Wallerius of Sacramento.

### SAN FRANCISCO

The **San Francisco Radiological Society** elected the following officers for the year October 1963 through October 1964: Dr. Merrell A. Sisson, president; Dr. Walter Coulson, president-elect; Dr. Malcolm Jones, secretary-treasurer; Dr. John H. Heald, executive board (two-year term), and Dr. Lawrence Post, executive board (one-year term).

\* \* \*

Dr. John B. Schaupp will succeed Dr. A. Justin Williams as president of the **San Francisco Medical Society** on January 1, and Dr. Edgar Wayburn has been elected president-elect.

Dr. George K. Herzog, Jr., was reelected secretary, and Dr. Alex F. Frazer, treasurer.

\* \* \*

Dr. John J. Sampson, San Francisco, was installed as president of the **American Heart Association** for the 1963-64 term at the recent annual meeting of the organization in Los Angeles. He is a past president of the **San Francisco Heart Association**.

### SANTA CLARA

Dr. S. Fred Kaufman of San Jose will take office as president of the **Santa Clara County Medical Society** January 1, 1965, and Dr. Richard Wilbur of Palo Alto is the new president-elect.

Other officers elected at the annual meeting were: Dr. Stanley A. Skillicorn of San Jose, first vice-president; Dr. Richard Alexander of Sunnyvale, second vice-president; Dr. R. Morton Manson of San Jose, third vice-president; Dr. Jacob M. Stone of San Jose, secretary, and Dr. Dean C. Varney of San Jose, treasurer. Dr. George D. Ramsay of San Jose was re-elected editor of the *Bulletin*.

### GENERAL

The **Far Western Medical Association** will hold its convention at Sun Valley, Idaho, February 1 to 8, 1964.

\* \* \*

At the annual meeting of the **American Society for the Study of Sterility**, to be held at Bal Harbour, Florida, on May 15, 16 and 17, the **Carl G. Hartman grant-in-aid in the amount of \$500** will be awarded to the most meritorious **research project in fertility and sterility** or related subjects, as chosen by the awards committee. Applications for this grant-in-aid should be sent to Michael Newton, M.D., chairman, Awards Committee, American Society for the Study of Sterility, 2500 North State Street, Jackson 6, Mississippi, before March 15, 1964. The applications should consist of an original and one carbon copy of an outline of the proposed research. This should include the name of the investigator, the place where the work is to be done, a summary of pertinent background material and a statement of the proposed study and its importance. Special application forms are not required, but the outline should be brief and yet sufficiently clear so that the committee can evaluate it.

# EDUCATION NOTICES

## MEETINGS AND COURSES

### COMMITTEE ON CONTINUING MEDICAL EDUCATION

THIS BULLETIN of the dates of continuing education programs and the meetings of various medical organizations in California is supplied by the Committee on Continuing Medical Education of the California Medical Association. In order that they may be listed here, please send communications relating to your future meetings or postgraduate courses to Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco, California 94102.

### MEDICAL MEETINGS

#### JANUARY MEETINGS

Jan. 6-10—**American College of Physicians Postgraduate Course.** "Nuclear Medicine and Radiation Biology," Joseph Ross, M.D., F.A.C.P., director. University of California Medical Center, Los Angeles. Monday-Friday. Members \$60. Non-members, \$100. Contact: Edward C. Rose-now, M.D., executive director, The American College of Physicians, 4200 Pine Street, Philadelphia.

Jan. 8.—**Los Angeles County Heart Association 8th Annual Midwinter Symposium.** Statler-Hilton Hotel, Los Angeles. Wednesday. 9:00 a.m.-4:00 p.m. Contact: Morton H. Maxwell, M.D., Los Angeles County Heart Association, 2405 West Eighth Street, Los Angeles 90057.

Jan. 8.—**Los Angeles Radiological Society.** Wednesday. Contact: Bernard J. O'Loughlin, M.D., executive secretary, Dept. of Radiology, UCLA Center for the Health Sciences, Los Angeles 90024.

Jan. 9.—**Los Angeles Pediatric Society Third Parmelee Lecture.** Ambassador Hotel, 3400 Wilshire, Los Angeles. Thursday. 6:30 p.m. Contact: Wm. D. Misbach, M.D., vice president, 17258 Ventura Boulevard, Encino.

Jan. 18.—**Orange County Heart Association 9th Annual Symposium on Heart Disease.** Charter House Hotel, Anaheim. Saturday. All day. \$15, including lunch. Contact: Howard G. Buswell, executive director, Orange County Heart Association, P.O. Box 1704, Santa Ana.

Jan. 18.—**Monteirey County Heart Association and Stanford Medical School.** Tenth Annual Symposium on Cardiovascular Diseases. Fort Ord. Saturday. 8:30 a.m.-4:30 p.m. \$10. Contact: D. M. Scanlon, M.D., symposium chairman, Box 4948, Carmel.

Jan. 24.—**Fresno County Heart Association Twelfth Annual Physicians' Cardiovascular Symposium.** Fresno Elks Club, 5080 East Kings Canyon Road. Friday. 9:00 a.m.-5:00 p.m. \$10. Contact: Frances Cuthbertson, executive director, Fresno County Heart Association, 1921 East Belmont Avenue, Fresno.

Jan. 25.—**Childrens Hospital of Los Angeles Second Clinical Conference in Pediatric Anesthesiology.** Contact: M. Digby Leith, M.D., Childrens Hospital of Los Angeles, 4614 Sunset Boulevard, Los Angeles 27.

Jan. 30-31—**Conference on Comparative Atherosclerosis, Spontaneous and Experimental.** Sponsored by

National Heart Institute, Los Angeles Heart Association, and American Heart Association. Beverly Hills Hotel, Beverly Hills. Thursday-Friday. 9:00 a.m.-5:45 p.m. \$10 each day. Registration limited to 500. Contact: Mrs. Elizabeth B. McCandless, 2405 West 8th Street, Los Angeles 90057.

Jan. 30-Feb. 1—**Western Society of Clinical Research.** Golden Bough Theater, Carmel. Friday-Sunday. Contact: Dept. of Medicine, University of California Medical Center. MO 4-3600.

#### FEBRUARY MEETINGS

Feb. 1-2—**Los Angeles Radiological Society.** 6th Annual Midwinter Radiological Conference, 1964. Biltmore Hotel, Los Angeles. Saturday-Sunday. \$25 (including 2 luncheon meetings). Contact: Mathew E. O'Keefe, M.D., publicity chairman, 402 East Hadley Street, Whittier.

Feb. 3-7—**San Diego Heart Association.** First Annual Postgraduate Seminar. Monday-Friday. Registration limited to 25. \$100. Contact: William J. Kuzman, 3545 - 4th Avenue, San Diego 92103.

Feb. 3-7—**American Thoracic Society.** Second annual postgraduate course: "The Evaluation of Pulmonary Function." Rancho Los Amigos Hospital, Downey. Monday-Friday. Members, \$75. Non-members, \$100. Registration limited to 90. Contact: Robert E. Randle, M.D., Pulmonary Function Course Planning Committee, 1670 Beverly Boulevard, Los Angeles 90026.

Feb. 6-9—**American College of Physicians.** Combined meeting: Northern California, Nevada, and Southern California. Tropicana Hotel, Las Vegas. Contact: Robert Escamilla, M.D., or George C. Griffith, M.D., 1136 West 6th Street, Los Angeles 90017.

Feb. 7-12—**American Academy of Allergy.** San Francisco. Contact: James O. Kelley, executive secretary, 756 N. Milwaukee, Milwaukee 53212.

Feb. 8-9—**Los Angeles Obstetrical and Gynecological Forum.** For younger specialists and General Practitioners who emphasize obstetrics and gynecology. Ambassador Hotel, Los Angeles. Saturday-Sunday. \$25. Residents and Interns, \$9.00. Contact: Dee Davis, executive secretary, Los Angeles Obstetrical and Gynecological Forum, 5410 Wilshire Boulevard, Los Angeles 90036.

Feb. 10-14—**Obstetrical and Gynecological Assembly of Southern California.** Nineteenth annual 5-day meeting for Specialists in the 13 Western States, Mexico, and Western Canada. Attendance limited. Monday-Friday. \$85.00. Contact: THE COMMITTEE, Obstetrical and Gynecological Assembly of Southern California, 5410 Wilshire Boulevard, Los Angeles 90036.

Feb. 13-15—**Society of University Surgeons.** Los Angeles. Thursday-Saturday. Contact: C. Frederick Kittle, M.D., University of Kansas Medical Center, Kansas City 66103.

Feb. 16-20—**Western Section, American Urological Association.** Fortieth Annual Meeting. Hotel Del Coronado, Coronado. Contact: M. J. Feeney, M.D., registration, 3415 Sixth Avenue, San Diego 92103.

Feb. 17-18—**Institute for Metabolic Research.** "Recent Additions to the Knowledge of Diabetes." Highland-Alameda County Hospital, Oakland. Monday-Tuesday. All day. Fee: to be determined. Contact: L. W. Kinsell, M.D., director, Institute of Metabolic Research.

#### MARCH MEETINGS

Mar. 4-5—**Los Angeles County Heart Association and Los Angeles Chapter of the California Academy of**



**General Practice.** "First Annual Cardiovascular Symposium for Physicians Practicing General Medicine." Statler Hilton Hotel, Los Angeles. Wednesday-Thursday. 9:00 a.m.-4:30 p.m. \$20. (includes two luncheons). Contact: Harold Miller, M.D., 2405 West Eighth Street, Los Angeles 90057.

**Mar. 8-12—Alumni Postgraduate Convention, Loma Linda University School of Medicine.** Mar. 8-9 (Sunday-Monday)—Refresher Courses. White Memorial Medical Center. \$10 each half-day course. Mar. 10-12 (Tuesday-Thursday)—Scientific Assembly. Ambassador Hotel. Members: \$10. Non-members: \$15. Contact: Jack G. Hallat, M.D., general chairman, 316 North Bailey Street, Los Angeles 90033.

**Mar. 13-15—Anesthesia Section, Los Angeles County Medical Association.** Ninth Annual Postgraduate Assembly in Anesthesiology. Statler Hilton Hotel, Los Angeles. Friday-Monday. \$20. Contact: Joseph L. Cadranell, M.D., secretary, 9430 Kirkside Road, Los Angeles 90035.

**Mar. 21—California Society of Anesthesiologists.** Annual Meeting, House of Delegates. Biltmore Hotel, Los Angeles. Saturday. 9:00 a.m. No fee. Contact: Robert E. Ploss, M.D., secretary-treasurer, 39 North San Mateo Drive, San Mateo.

**Mar. 21—California Chapter, American College of Chest Physicians.** Clinical Program. Biltmore Hotel, Los Angeles. Saturday—all day. No fee. Contact: Joseph Boyle, M.D., secretary, 1136 West 6th Street, Los Angeles 90017.

**March 22-25—CALIFORNIA MEDICAL ASSOCIATION 93rd Annual Session.** Scientific theme: "Immunology." Biltmore Hotel, Los Angeles. Sunday-Wednesday. Contact: Mr. John Hunton, executive secretary, 693 Sutter Street, San Francisco 94102.

## POSTGRADUATE EDUCATION

### AUDIO-DIGEST FOUNDATION

**Audio-Digest Foundation** (a non-profit subsidiary of the California Medical Association) provides by subscription twice-a-month tape-recorded summaries of leading national meetings and authoritative surveys of current literature. Seven separate services in: General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, Anesthesiology, and Ophthalmology. A new Catalog of outstanding lectures and panel discussions in all areas of medical practice is also available. For information, write: Mr. Claron L. Oakley, Editor, 619 South Westlake Avenue, Los Angeles.

### STANFORD UNIVERSITY

**Jan. 6-March 14—Tropical Health.** An intensive ten-week course covering Public Health Administration, Tropical Diseases, Medical Specialties relevant to the practice of medicine in tropical and sub-tropical areas, combined with general review of specific topics in medicine and surgery. Registration limited to 10. Stanford University School of Medicine. Monday-Friday. 8 hours per day. \$470. \$100 deposit and brief curriculum vitae must accompany application for registration. Make check payable to STANFORD UNIVERSITY. Applicants will be notified of acceptance by November 15. Contact: Quentin M. Geiman, Ph.D., Dept. of Preventive Medicine, Stanford University School of Medicine, 300 Pasteur Drive, Palo Alto.

**Mar. 20-21—Dermatology of the Infant Child and Adolescent.** Friday-Saturday. \$35. Contact: George Wilson,

M.D., Clinical Associate Professor, Dept. of Dermatology, Stanford University School of Medicine, 300 Pasteur Drive, Palo Alto.

### UNIVERSITY OF CALIFORNIA AT LOS ANGELES

**Jan. 13-May 11—Teaching Clinics in the Psychiatric Aspects of Medical Practice.** Monday evenings. 36 hours.\*

**Jan. 18—Pediatrics.** Cedars of Lebanon Hospital, Los Angeles. Saturday. 6½ hours.\*

**Jan. 19—Obstetrics.** Cedars of Lebanon Hospital, Los Angeles. Sunday. 6½ hours.\*

**Feb. 8-9—Office Management of Urological Problems.** Saturday-Sunday. 9 hours.\*

**Feb. 10—Surgical Techniques Utilizing the Isolated Intestinal Segment in Urological Procedures.** Monday. 7 hours.\*

**Feb. 10-Feb. 21—Prosthetics—Orthotics.** Monday-Friday, 2 weeks. 90 hours. \$200.

**Feb. 13-April 2—Bedside Clinics.** Harbor General Hospital, Torrance. Thursday evenings. 16 hours.\*

**Feb. 15-Feb. 19—Advanced Seminars on Controversial Areas in Surgery.** Wonder Palms Hotel, Palm Springs. Saturday-Wednesday. 12 hours. \$100 plus room and meals.

**Feb. 21-23—Advanced Seminars in Reconstructive Surgery** (including Tissue Transplant and Chemotherapy). Friday-Sunday. 9 hours. \$100 plus room and meals.

**Feb. 21-23—Proctology.** Veterans Administration Hospital, West Los Angeles, and UCLA. Friday-Sunday. 15½ hours.\*

**Feb. 26-Mar. 7—Postgraduate Medical Lecture Series in Mexico City and Merida.** Monday-Friday. 26 hours. \$100. Including Merida, \$125.

**Feb. 29—Education for Marriage** (for the General Public). Saturday. 7 hours.\*

**Feb. 29—Internal Medicine.** Cedars of Lebanon Hospital, Los Angeles. Saturday. 6½ hours.\*

**Mar. 1—Surgery.** Cedars of Lebanon Hospital, Los Angeles. Sunday. 6½ hours.\*

**Mar. 4-May 20—Psychiatry for Non-Psychiatrists.** Wednesday evenings. 40 hours.\*

**Mar. 7—Practical Management of Diseases of the Mouth.** Saturday. 7 hours.\*

**Mar. 7-Mar. 28—Postgraduate Medical Lecture Series in Egypt, Lebanon, and Greece.** Monday-Friday. 32 hours. \$200.

**Mar. 13-15—Resuscitation.** Harbor General Hospital, Torrance. Friday-Sunday. 18 hours.\*

**Mar. 14-15—The Spine—Anatomy, Pathology, Surgery.** Saturday-Sunday. 12 hours.\*

**Dates by Arrangement—Clinical Traineeship—Anatomy, Anesthesia, Dermatology, Pediatrics, Radioisotopes, Urology:** 2 weeks, \$150; 4 weeks, \$250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, 478-9711, Ext. 2114.

### LOMA LINDA UNIVERSITY

**As Arranged—Traineeships** in clinical and other departments are available by arrangement with department chairmen of the Postgraduate Division. 80 hours minimum.

\*Fee to be announced.

**Anesthesia**, 6 months. 250-300 hours. \$350.

**Pulmonary Diseases**—can be arranged.

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#### **PRESBYTERIAN MEDICAL CENTER**

Jan. 11—**Medical Emergencies**, Saturday. 8 hours. \$25.

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Feb. 8.—**Practical Proctology**, Lane Hall, Presbyterian Medical Center. Saturday. 9:00 a.m.-5:00 p.m. \$25.

For information contact: Arthur Selzer, M.D., chairman, Education Committee, Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15. WESt 1-8000.

#### **UNIVERSITY OF CALIFORNIA, SAN FRANCISCO**

Jan. 11—**Adverse Reactions in Therapy**, Children's Hospital, San Francisco. Saturday. 6 hours. \$15.

Jan. 25-26—**Annual Symposium: Man and Civilization: "The Family Search for Survival."** Saturday-Sunday. 18 hours. \$25.

Jan. 29-April 22—**Practical Psychotherapy** (continued). Langley Porter Neuropsychiatric Institute. Wednesdays. 11:00 a.m.-5:00 p.m. 60 hours, \$25.

Feb. 1-Mar. 7—**The Treatment of Anxiety in Medical Practice**, Herrick Memorial Hospital. Saturdays. 9:00 a.m.-12:00. 18 hours. \$10.

Feb. 3—**Medical Aspects of Well Being—Chronic Illness**, Monday. 8 hours. \$10.

Feb. 13-14—**Genetics in Ophthalmology**, Thursday-Friday. 16 hours. \$65.

Feb. 21-23—**Three Days of Cardiology**, Friday-Sunday. 24 hours. Members: \$50. Non-members: \$75.

Feb. 24-28—**Course for Physicians in General Practice**, Monday-Friday. 32 hours. \$100.

Feb. 29-Mar. 1—**Neuropsychiatry in General Practice**, Napa State Hospital. Saturday-Sunday. 16 hours. \$20.

Mar. 4-8—**Diagnostic Radiology**, Wednesday-Sunday. 40 hours. \$110.

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For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MOntrose 4-3600, Ext. 179.

#### **UNIVERSITY OF SOUTHERN CALIFORNIA**

Jan. 9-Mar. 26—**Bedside Clinics and Set Clinics in Internal Medicine**, Los Angeles County Hospital. Thursdays. 7:30-9:30 p.m. 24 hours. \$75.

Jan. 18-25—**Postgraduate Refresher Course in San**

**Juan, Puerto Rico**. One week, Saturday-Saturday. 17½ hours. \$75.00.

Jan. 30-31—**Introduction to Practical Electrocardiography**, Statler-Hilton Hotel. Thursday-Friday. 8:30 a.m.-5:00 p.m. 14 hours. \$40.

Jan. 31-June 12—**Nuclear Medicine** (Part I, II, III). Fridays (1 hour weekly). Part I \$50.

Feb. 7-9—**Intensive Seminars in Psychiatric Problems Seen in Medical Practice**, Phoenix, Arizona. Friday-Sunday.† \$15.

Feb. 9—**Symposium on Shock**, Statler Hilton Hotel. 9:30 a.m.-4:30 p.m. 6 hours. \$15. Luncheon, \$4.50.

Feb. 13-14—**Diabetes**, Statler Hilton Hotel. Friday-Saturday. 8:45 a.m.-5:15 p.m. 14½ hours. \$30.

Feb. 14-16—**Neurologic Procedures and Principles Useful in Internal Medicine**, Los Angeles County Hospital. Friday-Sunday. 8:30 a.m.-5:30 p.m. 25½ hours. \$60.

Mar. 4-May 13—**Pediatric Psychiatry**, Los Angeles County Hospital. Wednesdays. 3:00 p.m.-5:00 p.m. Ten 2-hour sessions. \$25.

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For course information contact: Phil R. Manning, M.D., Assoc. Dean, Postgraduate Division, USC School of Medicine, 2025 Zonal Ave., Los Angeles 33, CApital 5-1511, Ext. 9.

#### **CALIFORNIA MEDICAL ASSOCIATION**

##### **Committee on Continuing Medical Education 14th Annual Postgraduate Institutes, 1964**

Feb. 6-7—**SOUTHERN COUNTIES**, in cooperation with University of California School of Medicine, San Francisco. "Newer Diagnostic Methods." El Mirador Hotel, Palm Springs. Chairman: John Cram, M.D., 575 - 5th Street, San Bernardino.

April 10-11—**WEST COAST COUNTIES**, in cooperation with Stanford School of Medicine. Del Monte Lodge, Pebble Beach. Chairman: William B. Wenner, M.D., 726 Cass Street, Monterey.

April 23-24—**NORTH COAST COUNTIES**, in cooperation with UCLA School of Medicine. Brooktrails, Willits. "The Human Kidney in Health and Disease." Chairman: Patrick R. Allanson, M.D., 728 South State Street, Ukiah.

May 7-8—**SAN JOAQUIN COUNTIES**, in cooperation with Loma Linda University School of Medicine, Ahwahnee Hotel, Yosemite. "Gastroenterology." Chairman: Leo Goodman, M.D., 1341 Wishon Avenue, Fresno.

June 26-27—**SACRAMENTO VALLEY COUNTIES**, in cooperation with USC School of Medicine. Harvey's Wagon Wheel, Lake Tahoe. Chairman: William Tucker, M.D., 3560 "Jay" Street, Sacramento.

For information regarding Postgraduate Institutes and Circuit Courses, contact: Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 94102. PRospect 6-9400, Ext. 68.

†Hours to be announced.





## THE PHYSICIAN'S *Bookshelf*

**MEDICINE AND THE STATE**—Matthew J. Lynch, M.D., M.R.C.P., Lond., F.C.A.P., and Stanley S. Raphael, M.B., B.S., Lond., Department of Pathology, Sudbury General Hospital, Sudbury Memorial Hospital, Sudbury, Ontario, Canada. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Ill., 1963. 449 pages, \$9.75.

This book is a lucid, comprehensive and readable account of state medicine in many parts of the world.

The authors, two British physicians now practicing in Canada, are deeply conscious of and interested in the battle between the planned and the free society. They believe that medical practice is most apt to be effective and improving in a free society, despite the many readily visible defects in private practice.

The initial chapter is entitled "In search of the ideal." Sigerist is quoted: "The goal of medicine is social. Man has a right to health . . . and all the medical care that science can give. There is only one way of achieving this: the physician must be removed from the sphere of competitive business." Like Sand, he believes that the ideal approach was that made in Russia. The arguments that socialized medicine is "inevitable," that compulsion is "necessary and desirable," and that "the profession need have no fear from government control" are neatly summarized.

Then follows a series of chapters dealing with extraordinary thoroughness with the background for and history of state medicine in Germany and Austria, in the U.S.S.R., in Britain, in New Zealand, in Australia and in Sweden.

The growth of the sickness insurance funds in Germany, their administrative costs and their accompanying political overtones are documented from official sources and publications. At first, the German profession felt its freedoms to be untouched by the new social insurance measures, but the amendments of 1892 quickly dispelled such illusions.

Hartmann, a Leipzig physician, realized that the doctors needed to unite to oppose the tyranny of the sickness fund administrators. His group had almost achieved victory when the powerful university medical groups compromised and indirectly permitted the 1911 law to go into effect. The professional status and the liberty of German physicians steadily deteriorated, and comparable decay took place in Austria. Despite repeated conferences and repeated promises, the Austrian profession felt forced to stage a strike on August the 25th and 26th, 1955. Following this there was slight improvement in their remuneration and their freedom to practice.

The status of medicine in Russia prior to the revolution of 1917 is discussed in a section headed "The Zemstvos." As in many other parts of the world, facilities for medical service were much more prevalent in cities than in rural communities. In order to correct this, the Soviets attempted to flood the medical schools with proletarian children, but the number of these competent to graduate fell far short of the mark. Frequent changes were made in medical education. In 1930 the medical schools were divorced from the univer-

sities and became technical schools under the Health Ministry (remaining so to this day). Final examinations were abolished and political ideology was increasingly stressed. The proportion of male students decreased. In December 1944 the medical curriculum was revised upwards again to six years. The authors present extensive statistical data to indicate the current trends in hospital staffing in Russia, the rather low status of nonhospital physicians and the lack of real preventive health care in many communities.

The series of chapters dealing with the British health program are of intense interest and, I believe, importance to American physicians. The "inevitability of gradualness," the repeated fractures of political promises, and the inadequate arrangements for hospital beds are documented by place and date.

The conditions of general practice in England today are described from first-hand experience: the complaint of the doctors that they have become clerks for the Welfare State is not without justification. The many promised health centers have failed to eventuate. While hospital consultants are frequently better off than formerly, general practitioners are worse off. The number of patients awaiting hospital admission at the end of each year is summarized in a table; the figure for 1960 was 466,000 (source: The Ministry of Health Annual Reports).

While Beveridge forecast a national health service cost of 170 million pounds per annum, the actual figures crept up from 449 million pounds in 1950 to 820 million pounds in 1960. Yet British doctors are emigrating at a steadily increasing rate in an attempt to seek politically freer and professionally more attractive climates.

The final chapters in the first division of this important publication deal with medicine in New Zealand, Australia and Sweden. The evolution of state medicine in these three countries, the experiences of patients and physicians with these systems, their costs, and their current trends are dealt with in detail and with abundant documentation. Of the three systems, the authors regard that in Australia as possessing the most attractiveness for both patient and doctor, and possessing the greatest chances for satisfactory evolution of good medical care by interested physicians. The difficulties with overplanning, even in a highly compact and intelligent group, as in Sweden, are shown by the woeful shortage of certain medical and nursing personnel, as well as pharmacists in that country. Private practice is continuing in New Zealand, increasing in Australia, but apparently declining in Sweden. At the same time, the trend to specialization is far higher in Sweden. A few years ago a survey conducted by the Swedish Medical Association disclosed that only 5 per cent of physicians were interested in a general practice career.

Part 2 of this book deals with the reaction of patients to state medicine in the different countries named, to the problem of malingering under compulsory health insurance, to the distribution of physicians and to the impact of state



medicine on health and disease. The influence of nationalized health schemes on the medical profession, on medical recruitment, on research, and in other spheres is dealt with extensively.

The authors believe that compulsory insurance in Germany has destroyed desirable doctor-patient relationships. They believe that in Russia the patient in general is not so much treated as "officially processed." In England he is given an average of about 8 minutes per visit, said time also including allowance for filling out numerous forms.

The problem of malingering in Germany, in Russia and in Great Britain is discussed in interesting fashion and the extraordinary efforts made by the Russians to control same may come as a surprise to some western readers.

The authors find no statistical evidence, either in published death rates or in life expectancy tables, that state medicine has resulted in measurable improvements. They acknowledge the fallibility of statistics but for certain diseases, like diphtheria, tuberculosis, pneumonia and appendicitis, believe that clues may be obtained. "We are unaware of any instance where definite improvement may be unequivocally claimed for a socialized system."

Professional satisfaction with state medicine is partly indicated by the fact that the medical emigration rate from Britain to the Dominions has been six times the general population rate during the last decade. Likewise, research in countries dominated by state medicine is measurably less than in countries in which it is still free.

The true per capita cost of medical care in the various countries is measured and summarized in chapter 28. "The mere size of the bureaucracy which administers a socialized scheme is a major factor in its perpetuation, since each official has a vested interest in its continuation. Unpalatable results, known completely only to administrators, are apt to be downgraded, explained away, or even concealed; and while there is no paucity of statistics, these are often published in a form of little assistance to the researcher who is attempting to draw valid comparisons and conclusions."

"In the field of health care, it does appear that once personal responsibility is removed, collective selfishness replaces the restraints of the individual conscience. Experience suggests that individual morality declines as public responsibility increases." Many things in society can be planned, but medical services are difficult to plan (witness the dramatic change in the need for tuberculosis sanatoria and for isolation hospitals in the last two decades). Health, in its broadest sense is best and most concisely defined as the continued successful adaptation to a changing environment. The ideal society is one whose members are free, educated and economically self-sufficient to the point that they can purchase with discrimination on an open market the goods and services of which they have need. For the minority who cannot so purchase, the remainder must assume responsibility, preferably by "across-the-board weighting of insurance premiums."

In summary, the authors (who are practicing pathologists at Sudbury, Ontario, Canada) believe that in the long run the public has more to gain from the intelligent development of voluntary medical service than from the planned economy of state medicine.

L. HENRY GARLAND, M.D.

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**AN Rh-Hr SYLLABUS—The Types and Their Applications—Second Edition**—Alexander S. Wiener, M.D., F.A.C.P., F.C.A.P., Associate Professor, Department of Forensic Medicine, New York University Medical School; Senior Bacteriologist (Serology) to the Office of the Chief Medical Examiner of New York City; Attending Immunohematologist, Jewish and Adelphi Hospitals, Brooklyn, N. Y.; and Irving B. Wexler, M.D., F.A.A.P., Clinical Associate

Professor of Pediatrics, University of New York Downstate Medical Center; Attending Pediatrician and Associate Immunohematologist, Jewish Hospital of Brooklyn, Associate Immunohematologist, Adelphi Hospital, Brooklyn, N. Y. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 108 pages, \$4.50.

This second edition of a very popular book provides a remarkable amount of information in a very small volume. Although major emphasis is placed on discussion of the Rh blood group system, the authors include discussions of fundamental immunohematologic concepts, erythroblastosis fetalis, autoimmune hemolytic anemia, anthropologic and medicolegal aspects of blood grouping, and the prevention and detection of blood transfusion reactions. The last section provides an opportunity for discussion of blood group systems other than Rh.

The presentation follows a logical order and is expressed in clear simple language. Each aspect of the discussion is confined to a single short paragraph with headings in bold-faced type. With the aid of the index, this permits easy location of any topic the reader wishes to study.

In a simplified presentation of this sort, the omission of references is not inappropriate. In any case, the authors' comments are based almost entirely on their own very extensive experience. The authors are strongly opposed to the use of the Fisher-Race CDE terminology for the Rh system, and readers whose knowledge of this blood group is limited to that terminology will find that they are learning another language.

A few statements are made with which one might quarrel. The authors persist in using the term "conglutinin" to explain agglutination by incomplete antibodies in high protein media, although that term has quite another meaning to most immunologists. They continue to use the word "univalent" for incomplete antibodies (with reservations), although evidence increases that such antibodies are really bivalent.

This book belongs on the shelf of every medical library. It is an ideal source of reference for anyone seeking a simple brief explanation of various aspects of immunohematology and blood transfusions, with particular reference to the Rh blood group system.

HERBERT A. PERKINS, M.D.

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**EPIDEMIOLOGY AND COMMUNICABLE DISEASE**—Fred B. Rogers, M.S., M.D., M.P.H., F.A.C.P., Professor of Preventive Medicine, Temple University School of Medicine, Philadelphia, Pa. Modern Medical Monographs 24, Irving S. Wright, M.D., Editor in Chief. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 104 pages, \$5.50.

There is a serious need for good textbooks in the field of epidemiology. Unfortunately, this need is not alleviated to any degree by the publication of this book. The preface describes the volume as a primer on epidemiology and communicable disease control and presumably the audience for which the book was written consists of medical students; however, there are so many inaccuracies of fact in the book that it should only be read by persons of mature judgment who would not be misled by these misstatements and no person with those qualifications would have any reason to read this book except possibly to write a review. The rationale for the relative weight given to the different topics that are treated is not at all clear and the organization and style of the book in details are unacceptable. At its best, it reads like a rehash of the "Handbook for Control of Communicable Diseases." At its worst, as though it had been translated from Russian by a deranged computer. The printing and binding seem satisfactory but, considering the contents, hardly justify the price.



**PEDIATRIC CARDIOLOGY—Second Edition**—Alexander S. Nadas, M.D., F.A.A.P., Associate Clinical Professor of Pediatrics, Harvard Medical School; Cardiologist, The Children's Hospital; Physician, Sharon Cardiovascular Unit, Children's Hospital Medical Center, Boston. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1963. 828 pages, illustrated, \$16.00.

This is a complete revision of the first edition and clearly makes this monograph one of the medical classics of our present day. The approach to pediatric cardiology is multidisciplinary and combines experienced clinical observations with modern technics of diagnosis such as vectorcardiography, phonocardiography and cardiac catheterization. The section on cardiac catheterization is thorough and includes a discussion of dye curve methods, and the use of radioactive krypton, the platinum electrode for the detection of small shunts. One might disagree with the author's preference for the left ventricular puncture technic for the study of patients with aortic stenosis since the percutaneous transseptal technic offers a safer and more physiologic method, particularly in older children. Simple bedside tests such as the use of amyl nitrite in the evaluation of systolic murmurs are not neglected. The illustrations are excellent and 766 well selected references are organized into a single bibliography. A useful feature is a collection of 35 tables at the back of the book containing normal values for the electrocardiogram in childhood, drug dosages and physiologic data. A most valuable aspect of the book is a summary of the extensive investigations Doctor Nadas and his workers have carried out in pediatric cardiology the past 15 years on such subjects as the natural history of congenital lesions, ventricular septal defect, transposition of the great vessels, aortic stenosis and cardiac arrhythmias.

There is only a two-paragraph discussion of angiography as a diagnostic technic in the chapter on cardiac catheterization, and only one angiogram appears in the illustrations. This leads one to the impression that clinical and hemodynamic methods are adequate diagnostic tools in pediatric cardiology when actually selective angiography is probably the diagnostic technic of choice in all cyanotic and many non-cyanotic lesions in childhood and infancy. There is no discussion of the pre- and post-operative care of infants undergoing cardiac surgery.

These shortcomings do not detract from a great book which should be on the shelves of all pediatricians and cardiologists.

H. N. HULTGREN, M.D.

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**FORENSIC MEDICINE—Courtroom Applications to Legal Principles**—Lewis J. Siegal, M.D., LL.B., Fellow, American Psychiatric Association; Fellow, New York Academy of Medicine; Member, Association for Research in Nervous and Mental Disease; Member, New York State and Federal New York District Bars; Chairman, Committee of Medical Jurisprudence, Bronx County, New York, Bar Association; Member, Society of Medical Jurisprudence, Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 354 pages, \$12.50.

The author, who is both a distinguished physician and a lawyer, seeks to clarify in a practical way for the legal, medical and related practitioner, his role in the perplexing legal aspects of his practice. Procedural principles and legal philosophies involved in courtroom conduct, as well as other juridical situations, are discussed. It does not purport to be an exhaustive treatise, but rather "a working tool to fill the need of the undergraduate law and medical student, as well as to function as a helper to those more recently admitted to these professions, to provide them thereby with the practical and appropriate answers to their every day problems which have to do with litigation . . ."

The book opens with a review and summary of what the

courts have held to be *The Doctor's Primary Responsibilities* (Chapter I)—the fiduciary relationship between doctor and patient. The confidential or privileged nature of the communications between doctor and patient, as granted by statute, is developed. The author also favors his readers with an extended discussion of the various aspects of *The Individual's Right to Privacy* (Chapter IX).

The physician's role as a witness and as a medical expert witness, and the difference between them, is well-delineated. Examples cited by the author are both interesting and informative. The ever-troublesome topic of fees for services as a witness is treated in a most practical way. A separate chapter is devoted to medical disclosures in will contests, the physical and mental condition of deceased, former patients, and medical problems occurring in criminal matters. There is a chapter devoted to the discussion of the requirements placed on physicians by workmen's compensation laws.

The special value of X-rays as diagnostic evidence is recognized by courts and other tribunals. Legal problems relating to X-ray practice are examined in Chapter VIII.

It has been estimated that 80 per cent of the cases brought to trial in our courts of law require some degree of medical proof. The interrelationship between medicine and the law continues to grow and more directly affect the practice of both professions. The author has a broad grasp of the many mutual concerns of the two professions. *Forensic Medicine* is highly recommended, particularly to the undergraduate and those who have recently entered the professions of medicine and the law.

WILLIAM M. WHELAN, LL.B.

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**MEDICAL MYCOLOGY**—Chester W. Emmons, Ph.D., Chief, Medical Mycology Section, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, Department of Health, Education and Welfare, Bethesda, Maryland; Chapman H. Binford, A.B., M.D., Research Pathologist, Leonard Wood Memorial Foundation; Medical Director (Ret.), U.S. Public Health Service; Chief, Geographic Pathology Division and Chief, Leprosy Branch; Armed Forces Institute of Pathology, Washington, D.C.; and John P. Utz, M.D., Chief, Infectious Disease Service, Laboratory of Clinical Investigation, National Institute of Allergy and Infectious Diseases, Department of Health, Education and Welfare, Bethesda, Maryland. Lea & Febiger, 600 South Washington Square, Philadelphia 6, Pa., 1963. 380 pages, 388 illustrations on 112 figures and 2 colored plates, \$14.00.

This single volume is complete, authoritative and concise. The three authors have merged their outstanding professional abilities and skills not only with respect to content but also with respect to language and phraseology. Emmons, the Senior Author, is one of the nation's two or three top medical mycologists and thus has major responsibility for insuring the integrity of the mycology, while his two physician-colleagues, Binford and Utz, complement his already recognized clinical, epidemiological and diagnostic understanding. The result is this text which is a book for physicians, mycologists, and indeed all other microbiologists, including technologists. Never before has a single text incorporated the salient aspects of *mycology* with *epidemiology* and with succinct *clinical* coverage.

The first seven chapters are lucid "background" and the first four chapters on fungi are especially fine in making medical mycology understandable to physicians. This also is aided by the glossary. The twenty-one chapters on specific mycoses are very precise and complete, covering etiology, historical background, clinical findings with differential diagnosis including identifying the fungus and immunological tests, concluding with mycology. The book concludes with an appendix of cultural media, materials and



methods and description of special strains so that these do not clutter up the text.

The photographs are profuse and magnificent. The bulk of the microphotographs and many of the gross pictures have been provided by Binford from our nation's richest resource, the Armed Forces Institute of Pathology.

The authors also deserve great praise in the conciseness of their discussions. The reviewer noted one place where brevity sacrificed clarity. There in the chapter on immunology and serology with reference to coccidioidomycosis the statement is made: "In general, titers of 1:8 and below are considered insignificant." This statement would not apply to CF tests we perform, though accurate interpretation admittedly is necessary and the authors incorporate the initial qualifying phrase, "in general"! Another cause for congratulations is the care with which references are cited. These have been kept minimal instead of the confusing plethora which many authors provide, probably more to impress than to inform the reader.

Therefore, this splendid text in medical mycology is strongly recommended to all who have an interest in this subject, be he a neophyte or a hardy veteran, be he a generalist or highly specialized, and these categories apply to physicians or microbiologists (including mycologists). This is a prize to read thoroughly and once having read it, to be cherished as a reference, never to be loaned unless the borrower is carefully recorded lest he has convenient amnesia.

CHARLES E. SMITH, M.D.

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**MANAGEMENT OF ANXIETY FOR THE GENERAL PRACTITIONER**—Edited by Nathan K. Rickles, M.D., F.A.P.A., Diplomate, American Board of Psychiatry and Neurology; Senior Consultant, Veterans Administration Center; Attending Physician, Cedars of Lebanon Hospital, Los Angeles, California. Charles C. Thomas, Publisher, Springfield, Illinois, 1963. 108 pages, \$5.00.

There is a frequent tendency these days to collate into book form the papers given at any symposium organized around a particular topic. This is especially so when either (a) the papers represent new contributions to the medical knowledge of the subject or (b) when they constitute in their collectivity an especially concise or lucid summary of the extant knowledge of the area.

In the opinion of this reviewer, the scant 108 pages which comprise this book fulfill neither of these criteria. It presents little that is new and it certainly does not make any attempt to embrace in any completeness the subject matter subsumed under so promising a title.

C. W. WAHL, M.D.

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**HANDBOOK OF OCULAR THERAPEUTICS AND PHARMACOLOGY**—Philip P. Ellis, M.D., Associate Professor and Head, Division of Ophthalmology, Department of Surgery, and Donn L. Smith, Ph.D., M.D., Associate Professor, Department of Pharmacology, and Associate Dean of the University of Colorado Medical Center, Denver, Colorado. The C. V. Mosby Co., 3207 Washington Boulevard, St. Louis 3, Mo., 1963. 193 pages, \$8.50.

This is a new type of ophthalmological text book. In this text the dosage, action, side reactions and contraindications are stressed. The chapters on ACTH and Cortisone as well as the one on antibiotics are very informative. The use of the newer blocking agents in the treatment of viral diseases as well as the care in steroid use is discussed. The newer treatments in mycotic infections are discussed and evaluated. An especially valuable adjunct is an excellent index.

This book fills a definite need of both student and clinician who have had to depend largely on the manufacturer's literature.

ALFRED R. ROBBINS, M.D.

**INTERNAL MEDICINE IN WORLD WAR II—Volume II, Infectious Diseases** (Medical Department, United States Army). Prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army. Colonel John Boyd Coates, Jr., MC, USA, Editor in Chief, and W. Paul Havens, Jr., M.D., Editor for Internal Medicine. Office of the Surgeon General, Department of the Army, Washington, D. C., 1963. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. Price \$6.75 (Buckram). 649 pages.

It is difficult to evaluate the place of a book on infectious diseases published some twenty years after the events described took place. Progress in this field has been rapid so as a text on infectious diseases the book is out dated.

As an historical account of the place of infectious diseases in World War II, and as a reminder of many of the exciting medical problems of World War II, I did find it interesting.

It is undoubtedly worth while reading for Army Medical officers who will face these problems in foreign countries. In particular the chapter on Typhus Fevers contains information on the various forms of Typhus and related diseases that few of us know.

I do not feel that the average practicing physician will find it worth while reading.

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**CANCER OF THE FEMALE REPRODUCTIVE ORGANS**—Alfred I. Sherman, M.D., Associate Professor of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis. The C. V. Mosby Company, Saint Louis, 1963. 338 pages, \$13.75.

This excellent book should be read by every resident in gynecology. In it the author has pulled together all the important information about gynecologic cancers and arranged it in a fairly simple and clearly understandable form. Much emphasis is placed on the reasoning behind the various methods of treatment described, and the details of radiation therapy are particularly well set forth. Throughout the book statistical survival rates obtained with different methods of treatment are interpreted in terms of the mechanisms involved in the observed results in order to stress the fact that mere differences in methods do not always account for differences in end results.

The illustrations, seventy in number, are diagrammatic and are nicely designed to call attention to and amplify portions of the text that might otherwise be confusing. All the diagrams were prepared especially for this volume.

After two introductory chapters dealing with the nature of malignant processes and the physics of radiation, the usual six anatomic portions of the female reproductive tract are considered individually. But additionally there are chapters on placental malignancies, sarcomas, and on persistent cancers. Finally, there are discussions of chemotherapy, surgical techniques, nursing and generally supportive care for cancer patients, and survival statistics. The chapter on statistics includes, in addition to the bare arithmetic, interesting comments on the validity of data, the vagueness of terminology in cancer literature, and the various methods of reporting statistics. Carefully selected references to the modern literature are placed at the end of each chapter.

This compact book should be helpful not only to house officers in gynecology and in radiotherapy but also to every physician personally involved in the treatment of gynecologic cancers. It reflects the intense interest in pelvic cancer therapy that has existed over several decades at Washington University and the St. Louis Maternity Hospital, nurtured not only by Sherman but by such outstanding investigators as A. N. Arneson, Willard Allen and Michel Ter-Pogossian.

C. E. McLENNAN, M.D.



**CLINICAL DISORDERS OF IRON METABOLISM**—Ernest Beutler, M.D., Chairman, Department of Medicine, and Director, Hospital for Blood Diseases, City of Hope Medical Center, Duarte, California; and Associate Clinical Professor of Medicine, University of Southern California; Virgil F. Fairbanks, M.D., Associate Physician, Department of Medicine and Hospital for Blood Diseases, City of Hope Medical Center, Duarte, California; and Instructor in Medicine, University of Southern California; and John L. Fahey, M.D., Assistant Physician, Department of Medicine and Hospital for Blood Diseases, City of Hope Medical Center, Duarte, California; and Instructor in Medicine, University of Southern California (At present: Attending Physician, Mercy Hospital, Scranton, Pa.). Grune & Stratton, Inc., 381 Park Avenue South, New York, N. Y., 1962. 267 pages, \$8.75.

This very readable monograph on iron by clinically oriented authors appeared earlier this year and is highly recommended. The contents include chapters on history, metabolism, iron deficiency and treatment both oral and parenteral, also a section on iron poisoning and hemochromatosis. The controversial material is presented in all lights; e.g., the contradictory evidence as to the control of iron absorption from the gut.

The authors' own extensive work is presented but in proper proportion and is not unduly emphasized. Their double blind study demonstrating the value of iron therapy in some fatigued women with blood counts in an equivocal range is worth reviewing.

The importance of bone marrow iron study in evaluating iron deficiency is emphasized, but a colored plate illustrating this would be helpful. The authors feel that radio iron substitutes are of little clinical value in iron deficiency which may be reassuring to those who do not have access to this isotope.

The review of the many oral iron preparations, their cost, efficacy, tolerance, in general little or unknown advantage over ferrous sulfate, is interesting. The increased intolerance of a green over a white ferrous sulfate pill and of an unknown (and presumed iron) as opposed to a known placebo by the patient makes one think. The book is well printed with many fine charts and illustrations. While much of the material will already be familiar to hematologists the book will be of particular value as well as entertaining reading to students and all doctors, including pathologists, pediatricians, physicians, surgeons, obstetricians and gynecologists.

WILLIAM F. LUTTGENS, M.D.

**CLINICAL METABOLISM OF BODY WATER AND ELECTROLYTES**—John H. Bland, M.D., Associate Professor of Clinical Medicine, and Director, Rheumatism Research Unit, University of Vermont College of Medicine; Attending Physician, Mary Fletcher and De Goesbriand Memorial Hospitals. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1963. 623 pages, \$16.50.

Water and electrolyte metabolic investigation is one of the most active areas in medical research and practice today. This book emphasizes the relation of laboratory research to clinical medicine. Major advances of the past few years are incorporated in the text, notably in the areas of anatomy of body water and electrolytes, total body composition, intracellular hydrogen ion concentration, aldosterone and antidiuretic hormone regulation of water and electrolyte metabolism, transport system and the relations among water, electrolyte, hydrogen ion and the connective tissue system.

Twenty-one authors have contributed to this volume, with J. H. Bland as the principal author as well as the editor. The book has been assembled in traditional fashion. The first part (8 chapters) and several later reference chapters are devoted to basic biochemical and physiologic description. The other chapters are concerned with disease states

in different parts of the body or different organ systems. Abnormalities are considered in terms of physiologic mechanisms. Summaries and bibliographies are given at the end of each chapter.

The average reader (e.g. the reviewer) will find chapter 2 on *Basic Physiologic Consideration of Body Water and Electrolyte* particularly useful, as it details definitions and concepts used throughout the book. The glossary of symbols and abbreviations is also extremely serviceable in a work about a field of medicine in which so much basic and charges present (equivalents or milliequivalents).

The chapters on various broad areas of disease are generally good. If there is one to be singled out, it may be chapter 17 on *Water Electrolyte and Hydrogen Ion Abnormalities in Diabetes Mellitus* which does an excellent job of bringing the reader up to the level of the clinical investigator, even to conveying the equivocal or doubtful implications of some of the data presented.

The authors have used equivalents instead of gravimetric weight-volume measurements throughout, inasmuch as electrolytes are of physiologic importance—because of the number of particles and charges in solution rather than because of their weight. Therefore, their measurements are clinically useful when reported in terms of the number of particles present (mols or millimols) or as the number of charges present (equivalent or milliequivalents).

We have no hesitation in recommending this excellent volume to students and physicians interested in the pathophysiology of disease states. It will be particularly valuable to the "senior clinician" who wants to keep up with basic concepts and investigative progress in his particular field of interest.

EDGAR WAYBURN, M.D.

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**SEXUAL RESPONSIBILITY IN MARRIAGE**—Maxine Davis. Introduction by Allan C. Barnes, M.D., Director, Department of Gynecology and Obstetrics, Johns Hopkins University School of Medicine. The Dial Press, Inc., 461 Park Avenue South, New York 16, N. Y., 1963. 380 pages, \$7.50.

This new marriage manual is an exceptionally well written non-technical guide to the anatomy, physiology, and psychology of sexual love. It is aimed at normal people, both pre- and postmarital grownups, who are encountering one or another of the inevitable psychological roadblocks which every couple faces somewhere along the trail from courtship to old age. In his introduction to this volume, Allan Barnes, Professor of Gynecology and Obstetrics at the Johns Hopkins University School of Medicine, says much of Miss Davis' message is applicable to all people and all of what she has written will probably be helpful to some people. She reminds us, Barnes points out, that marriage carries sexual responsibilities as well as sexual prerogatives.

In a prologue, the author herself says the book is about the meaning and place of sexual love in marriage in the context of married life today. This theme is developed in three sections and twenty-four chapters, the first section being devoted to a brief history of the development of sexual attitudes, the role of early sex education, problems of the adolescent, and premarital sexual experimentation. Part II is concerned with anatomy, physiology, and the techniques of sexual intercourse, as well as the details of contraceptive practices. The author, for the most part, had good technical advice on medical matters and only an occasional peculiar statement slipped by those who perused this section for factual accuracy. In Chapter II the recent publications of Masters are quoted extensively but the footnote references to these papers are carelessly inaccurate and incomplete.

The final section describes common roadblocks to sexual enjoyment, dispels some of the myths about female frigidity and male impotence, explains infertility and what to do



about it, and tries to probe the causes of infidelity. A short epilogue entitled "Must Marriage Become Monotonous?" is aimed at couples who have ceased to be sensitive to each other's needs and whose sexual relations have drifted into uninspired habit. Many interesting and obviously worthwhile corrective measures are suggested, and, as it says on the dust jacket, this marriage manual may well be as valuable on a couple's twenty-fifth anniversary as on their wedding night. This reviewer joins Dr. Barnes in recommending "Sexual Responsibility in Marriage" to all married couples and to all physicians who must from time to time provide counsel for husbands and wives.

C. E. McLENNAN, M.D.

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**KINESIOLOGY AND APPLIED ANATOMY**—The Science of Human Movement—Second Edition, 231 illustrations, 18 in color. Philip J. Rasch, Ph.D., F.A.C.S., Associate Professor of Physical Medicine and Rehabilitation, California College of Medicine, Los Angeles, Calif., and Roger K. Burke, Ph.D., F.A.C.S.M., Associate Professor of Physical Education, Occidental College, Los Angeles, Calif. Lea & Febiger, 600 S. Washington Square, Philadelphia 6, Pa., 1963. 503 pages, \$7.50.

In the second edition of *Kinesiology and Applied Anatomy* the authors provide an excellent treatise on the essential points of anatomy and physiology as they pertain to human motion. Students of physical education and physical therapy will find an interesting style making what in other hands might be dry, a very stimulating and useful account.

Sections six to eight provide the basic framework for consideration of the body in a kinesiological sense, i.e., discussions of the basic laws of physics as applied to human structure and motion. Sections eighteen and nineteen apply those principles to the everyday activities of posture, walking, running and jumping. Along with an interesting account of the historical development of kinesiology the remainder of the work is a presentation of a condensed version of the myology section of any standard anatomical text.

While the work will be of greatest help to those engaged in the study of physical education and physical therapy, students of medicine will find that it provides a good framework for thinking in functional rather than morphological terms.

\* \* \*

**AN ATLAS OF CONGENITAL HEART DISEASE**—Compiled from the Museum of Congenital Heart Disease at Children's Hospital of Pittsburgh—Frank E. Sherman, M.D., Associate Professor of Pathology, School of Medicine, University of Pittsburgh; Associate Pathologist to Children's Hospital of Pittsburgh. 263 illustrations on 200 Figures. Drawings by Margaret M. Croup and Ruth Ann Barmettler. Lea & Febiger, 600 S. Washington Square, Philadelphia 6, Pa., 1963. 303 pages, \$15.00.

This book is a summation of experience gained while collecting and classifying material for a museum of congenital heart disease. The total specimens studied numbered 503. A large part of the study concerns congenital heart lesions that are lethal in early infancy.

The work is primarily a morphologic study rather than a clinical textbook of congenital heart disease. Some general physiologic concepts are included in order to facilitate the reader's transition from pathological morphology to clinical application. Embryological considerations are discussed only when this information is necessary to the understanding of gross anatomy and classification.

This atlas should appeal primarily to the cardiac surgeon, the cardiologist (particularly the pediatric cardiologist) and the pathologist. It will serve as a quick reference for specific anatomic problems as they arise and in this way, the book will be helpful to the medical student working up a case of congenital heart disease.

The outline of the method for examination of congenital

heart disease at autopsy is a particularly good chapter. A careful description of in situ dissection is presented. The principles of dissection presented by the author could serve as a standard for all pathologists when conducting a necropsy on a congenitally malformed heart.

An important table appears on pages 21 and 22. The data in this table were obtained by mechanical analysis of punch cards. Its purpose is to give an overall view of the lesions encountered in the observed specimens. The most striking demonstration in this table is the frequent multiplicity of lesions in single specimens.

The atlas is a valuable addition to our rapidly accumulating information on congenital heart disease and provides a readily accessible exposition of the gross morphology of congenital heart disease.

H. BRODIE STEPHENS, M.D.

\* \* \*

**SYNOPSIS OF EAR, NOSE, AND THROAT DISEASES**—Second Edition—Robert E. Ryan, B.S., M.D., M.S. (ALR), F.A.C.S., Assistant Professor, Department of Otolaryngology, St. Louis University School of Medicine; Associate Otolaryngologist, St. John's Hospital, St. Louis, Mo.; William C. Thornell, A.B., B.M., M.D., M.S. (ALR), F.A.C.S., Assistant Professor, Department of Otolaryngology, Cincinnati College of Medicine, University of Cincinnati, Cincinnati, Ohio; and Hans von Leden, M.D., F.A.C.S., F.I.C.S., Associate Professor of Surgery—Head and Neck, University of California School of Medicine, Los Angeles, Calif.; Attending Surgeon, University of California Hospital, Los Angeles, Calif. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis, Mo. 63103; 1963. 425 pages, \$7.50.

The second edition of this synopsis contemporizes an extremely valuable teaching aid. The authors are outstanding young otolaryngologists who are active in teaching and in research in three of our leading medical schools. While this little book is in no way intended to supplant detailed texts in otolaryngology, it is a remarkably handy and comprehensive guide for medical students, interns, residents, and physicians practicing in other fields. As such, it is worthy of an unqualified recommendation.

CHARLES P. LEBE, M.D.

\* \* \*

**AN ATLAS OF HEMODYNAMICS OF THE CARDIO-VASCULAR SYSTEM**—Howard L. Moskovitz, M.D., Asst. Attending Physician and Senior Member of Cardiac Catheterization Team, and Ephraim Donoso, M.D., Asst. Attending Physician in Cardiology, Mount Sinai Hospital, New York; Ira J. Gelb, M.D., Research Asst. in Cardiology, Mount Sinai Hospital, New York, and Assoc. Attending Physician New Rochelle Hospital; and Robert J. Wilder, M.D., Asst. Director, Dept. of Surgery, Baltimore City Hospitals and Asst. Prof. of Surgery, Johns Hopkins University School of Medicine. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 277 pages, \$2.75.

This monograph contains 125 full-page figures and an approximately equal space devoted to text. The authors state in the introduction that their objective is to "find a middle ground between the lengthy exposition of the classical textbook of cardiology and the traditional atlas . . ." The material is divided into sections: normal heart; acquired cardiac lesions (in which pulmonic valve lesions are included); congenital heart lesions; cardiac arrhythmias; fourth heart sound; mechanisms of production of flow murmurs; and hypothermia. It can be seen from this division that the organization of the work is rather sketchy. Each subject is illustrated by one or more figures which contain pressure tracings (with equisensitive technic, taken from various areas), phonocardiograms and angiocardiograms with lengthy comments on hemodynamic and clinical implications related to the illustration. The majority of tracings and angiograms were obtained from dogs with simu-



lated and experimentally produced cardiac lesions. This unquestionably reduces the value of the atlas to the clinical physiologists who might be interested in presentation of the normal, abnormal and unusual tracings obtained from patients (the relationship between clinical and experimental lesions is uncertain, to say the least). A clinician reading the book might easily get lost in the physiological discussion presented unsystematically in relation to a given example. The book contains many excellent illustrations and instructive comments, but is disappointing as a whole, perhaps by its unusual objectives and structure. The clinician may prefer a simpler but more systematic presentation of circulatory dynamics; the clinical physiologist an atlas to enrich his clinical experience.

ARTHUR SELZER, M.D.

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**BIRTH DEFECTS**—Edited by Morris Fishbein, M.D. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1963. 335 pages, \$5.00.

This is the first edition of a compendium of views and advice on birth defects. Dr. Fishbein has assembled articles by thirty authorities dealing with practically all aspects of the subject. The history, social philosophy, cause, prevention and treatment of birth defects are dealt with. Specific defects such as harelip and cleft palate, heart malformations, club foot and other bony defects, hydrocephalus and spina bifides, fibrocystic disease and mental retardation are each discussed in separate chapters.

While the volume is welcomed in the preface as filling the needs of parents and laymen who face the problem of birth defects from personal experience with it, is is not directed primarily at the laymen in the opinion of this reviewer. Chapters on cell structure, cell differentiation, DNA and RNA synthesis, chromosome aberrations and inborn errors of metabolism are technical in nature and clearly intended for physicians, especially those dealing with children and parents of children who have a developmental defect. Such individuals will find the book stimulating and designed to be of practical usefulness in their work.

WILLIAM C. DEAMER, M.D.

\* \* \*

**THE PSYCHOLOGY OF MEANINGFUL VERBAL LEARNING**—An Introduction to School Learning—David P. Ausubel, Bureau of Educational Research, University of Illinois. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1963. 255 pages, \$6.50.

Dr. Ausubel has approached the task of assessing the psychology of meaningful verbal learning with the same scholarly thoroughness which he has previously demonstrated in his texts on the theory and problems of child and adolescent development. His new book is concerned with "reception learning" and he has organized his material in such a manner that the book itself is an example of his major hypothesis—namely that learning and retention are facilitated when the learner has a meaningful cognitive framework within which to organize and assimilate new material. This framework is provided the reader by an extensive introduction, overview and summary which precedes the main body of the text. Once Ausubel has oriented his reader he systematically reviews and evaluates existing literature in the field of human learning and elaborates his position. His broad and comprehensive statements relating to the existing knowledge in this field will be particularly useful to educators, psychologists, and physicians who are desirous of re-acquainting themselves with the basic principles of learning. Ausubel's approach in this book, while somewhat repetitious, seems to accomplish his aim. Educators faced with the problem of presenting students with an increasing number of complex and abstract learning tasks in an enlighten-

ment-conscious age will be interested in Ausubel's contention that learning by "discovery" and "empirical experience" is not necessarily more effective than meaningful "reception learning."

FRANK M. HEWETT, Ph.D.

\* \* \*

**ORTHOPEDIC DISEASES—Physiology, Pathology, Radiology, Second Edition**—Ernest Aegerter, M.D., Professor of Pathology and Director of Pathology, Temple University Medical Center and School of Medicine; Professor of Orthopedic Pathology, University of Pennsylvania Graduate School of Medicine; and John A. Kirkpatrick, Jr., M.D., Radiologist, St. Christopher's Hospital for Children; Associate Professor of Radiology (Pediatrics), Temple University School of Medicine. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1963. 786 pages, illustrated, \$16.00.

The Second Edition remains well organized with improvement in the x-ray demonstration of bone lesions. The bone tumor classification is up to date and clearly presented.

Some sections seem overly brief. However, the nature of this text is to survey the physiology, pathology and radiology of orthopedic diseases, rather than to be a source book. It is an excellent text to use in review for Board examinations.

The sections on chondrodysplasias and metabolic bone diseases are particularly well done.

BENJAMIN H. MAECK, M.D.

\* \* \*

**GENETICS OF MIGRANT AND ISOLATE POPULATIONS**—Proceedings of a Conference on Human Population Genetics in Israel Held at the Hebrew University, Jerusalem. Edited by Elisabeth Goldschmidt, Department of Zoology, Hebrew University. Published for the Association for the Aid of Crippled Children by The Williams & Wilkins Company. The Williams & Wilkins Company, Baltimore 2, Maryland, exclusive U. S. agents, 1963. 369 pages, \$9.00.

This is an excellent book and a very valuable one for anyone who desires to obtain an overall picture of the genetics of the Jewish populations. The data are presented very succinctly and clearly by outstanding individuals in the various fields that are covered.

The presentations dealing with blood groups, hemoglobinopathies, and G6PD deficiency are particularly illuminating and interesting. Genetic information of real importance is to be found also on such things as consanguinity in Japanese, acatalasemia and amyotrophic lateral sclerosis. The inclusion of the Exhibit Section on the Genetics of Israel's Populations enhances the value of the book a great deal.

JOHN S. LAWRENCE, M.D.

\* \* \*

**AN ATLAS OF ULTRASTRUCTURE**—Johannes A. G. Rhodin, M.D., Professor of Anatomy, New York University School of Medicine, New York City; Docent of Anatomy, Karolinska Institutet, Stockholm, Sweden. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1963. 222 pages, \$10.00.

This is a superb Atlas. The pictures are excellent and the descriptions of them are very clear and complete. The author states that his aim was to "bridge the gap" between light microscopy and electron microscopy. He appears to the reviewer to have done this very well. There is not total coverage of the mammalian body but few tissues fail to appear in the atlas. Some, of course, are covered more completely than others. The bibliography is very extensive. This Atlas will serve as a very authoritative source for pictures of the ultra structure of cells and for references to original publications in this field.

JOHN S. LAWRENCE, M.D.

# California

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#### KEY TO ABBREVIATIONS USED

(BRP)—Bureau of Research and Planning; (CMA)—California Medical Association; (CR)—Case Report; (CS)—Cancer Studies; (Ed.)—Editorial; (I)—Information; (LE)—Letter to Editor; (Misc.)—Miscellaneous; (Or.)—Original Article; (PE)—Page End; (RSB)—Report of Scientific Board.



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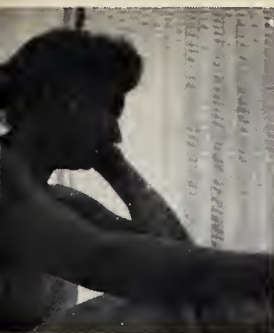
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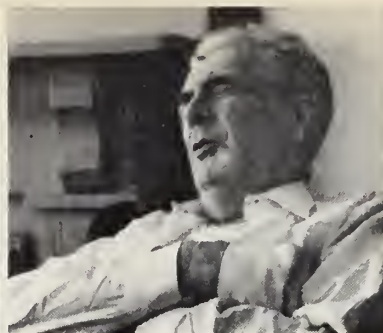




The insomniac



The tense, nervous patient



The heart-disease patient



The surgical patient



girl with dermatosis



Tension headache



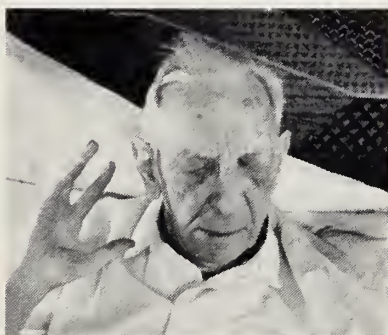
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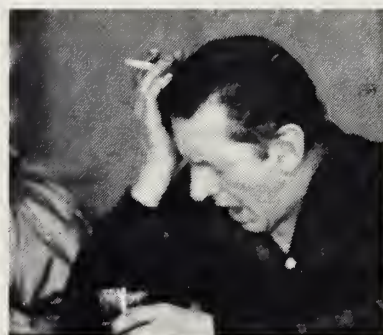
Anxious depression



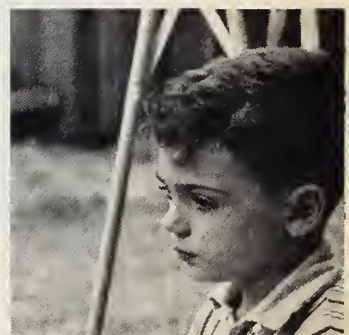
menstrual tension



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## Industrial Injuries Result From Mental Process

(Continued from Page 33)

begins calling for help, they said, and this is where the conflict comes in.

"Part of the man is begging people to help and to stop him; another part seems covertly to plan carefully and almost methodically to maim himself," they said.

The identification of these patterns, the authors said, documents their belief that the physical injury is part of the psychological process. However, they said, the glib labeling of this as "accident-proneness" fails to take into account the real events of an individual's life.

"The original concept made the assumption that certain people are always prone to accidents," they said.

"Our findings do not indicate this at all. They indicate that under special circumstances when certain conflicts exist many individuals tend to cause their own accidents and probably will hold onto the injuries they sustain, because the accidents solve their life problems."

The aging worker, for example, begins to lose his physical strength and as a consequence fears the loss of his only salable commodity and his job which represents his main purpose in life and is tied to his masculine identification and even his social life, the authors said.

"He is like the soldier on the battlefield, who would run to save his life but who also wants to stay and be a man," they said. "The conflict can be resolved with a partial solution—the soldier who is hurt does not have to fight, and the sick laborer doesn't have to work."

These patients are extremely difficult to treat, the authors concluded. They are solving their life problems by developing symptoms, and their symptoms guarantee them a legal incapacity which will provide for their continued support, they said.

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# 115 Reasons Why SYNALAR (fluocinolone acetonide) Is Replacing Hydrocortisone

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Robinson, H. M., Jr.; Raskin, J.; and Dunseath, W. J. R.: Topical Therapy with Fluocinolone Acetonide, *Bull Sch Med Univ Maryland* 47:21 (Apr) 1962

Since 1960, 115 clinical papers have appeared or are in press on the use of fluocinolone acetonide. These reports, on 4,562 patients, confirm the success of Synalar (fluocinolone acetonide) in the treatment of a wide range of inflammatory dermatoses.

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## REFERENCES AND REVIEWS

FAMILY MYTH AND HOMEOSTASIS—A. J. Ferreira, Arch. Gen. Psychiat., 9:457 (Nov.) 1963.

The notion of family myth is discussed as a homeostatic mechanism in family life. It refers to beliefs shared by all family members concerning their mutual position and role in the family. It represents part of the inner image of the group and it is to the family what the defenses are to the individual. This situation is illustrated with excerpts of family therapy. The author distinguished two major themes in the family myth: the theme of happiness and the theme of unhappiness, which he relates to two distinct motivations that these families may have when seeking psychiatric help.

\* \* \*

SYNDROME OF PAINFUL DYSFUNCTION OF THE TEMPOROMANDIBULAR JOINT—J. R. Ward et al., Arch. Intern. Med., 112:693 (Nov.) 1963.

The syndrome of painful dysfunction of the temporomandibular joint is a common clinical condition, presenting with earache and facial pain. The painful complex is often preceded by long standing incoordination of temporomandibular joint motion, as manifested by snapping or popping of the joint. Physical examination demonstrates abnormal motion of the jaw and tenderness of the pterygoids when

palpated through the mouth. Malocclusion is not a prominent finding. Conventional x-rays are of help in excluding organic lesions, while cineradiographic studies are of value in identifying the abnormal motion. The pathogenesis is best explained by painful contractive muscle spasm. Most patients are relieved of symptoms when treated with simple exercises which incorporate the features of active muscle stretch, reflex relaxation, and range of motion.

\* \* \*

SERUM LEUCINE AMINOPEPTIDASE—A. Kaplan and R. Ruark. Amer. J. Dis. Child., 106:161 (Aug.) 1963.

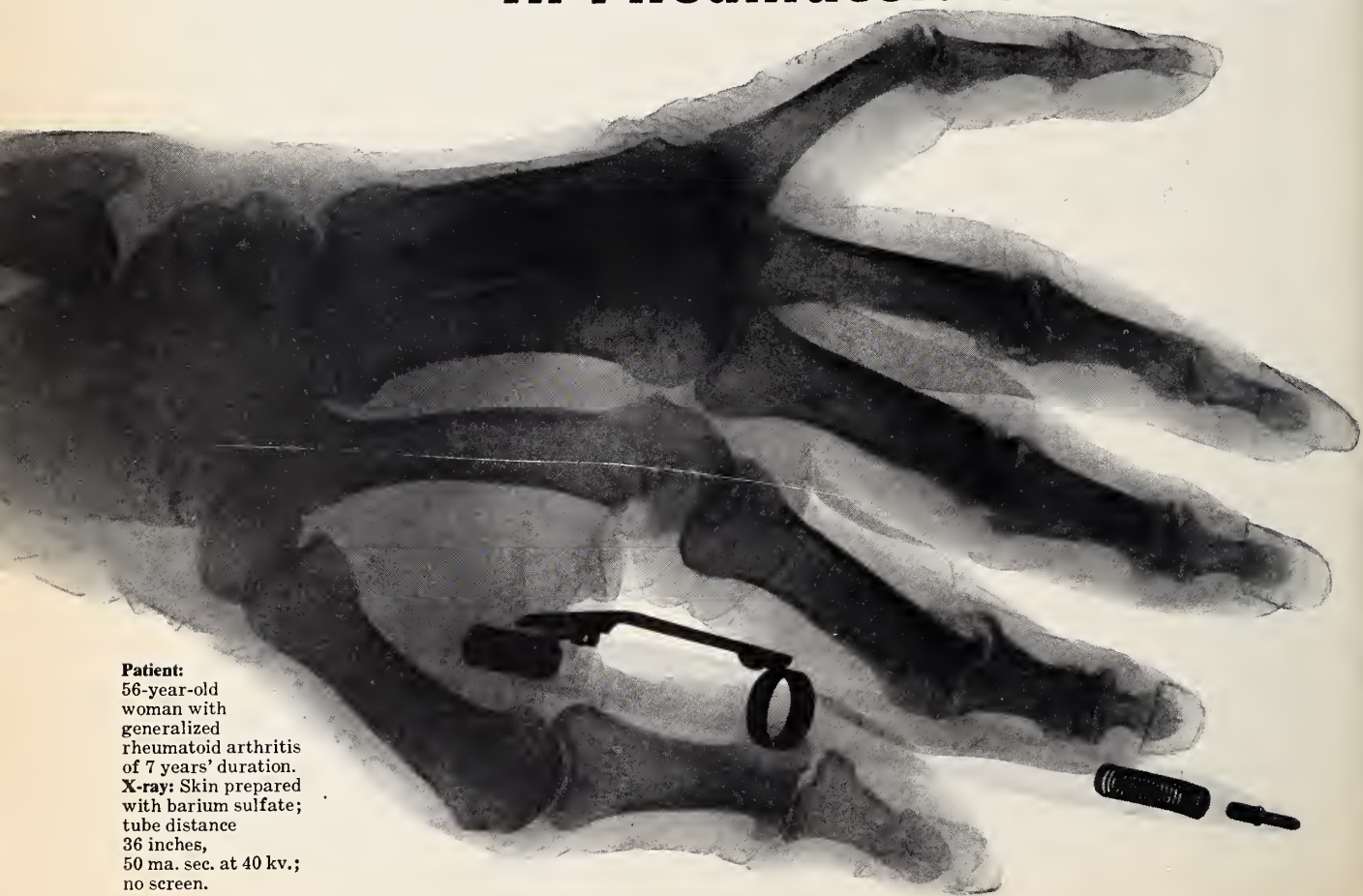
The mean serum leucine aminopeptidase (LAP) activity of normal infants at birth is about 30 per cent greater than that of adults. By the end of the first month of life, the serum LAP activities of the two groups are essentially the same. The elevated enzyme activity in the newborn period is independent of the serum bilirubin concentration.

\* \* \*

PANCREATIC CHANGES IN VARIOUS TYPES OF CIRRHOSIS IN ALCOHOLICS—H. J. Sobel and J. D. Waye. Gastroenterology, 45:341 (Sept.) 1963.

This study was designed to give a definitive answer to the problem of whether the pancreatitis and pancreatic fibrosis that occur in association with alcoholism and cirrhosis are related to alcoholism or to the type of cirrhosis. Sections of pancreas were examined and graded for fibrotic and inflammatory changes. Fifty-five patients with cirrhosis had an alcoholic history; of these, 31 had portal and 24 had postnecrotic cirrhosis. Of 32 nonalcoholic cirrhotics, 7 had portal and 25 had postnecrotic cirrhosis. Both the control and nonalcoholic group had about the same incidence of pancreatic lesions (15 per cent), but the alcoholic group

## *In rheumatoid arthritis ...*



**Patient:**  
56-year-old  
woman with  
generalized  
rheumatoid arthritis  
of 7 years' duration.  
**X-ray:** Skin prepared  
with barium sulfate;  
tube distance  
36 inches,  
50 ma. sec. at 40 kv.;  
no screen.



showed a greatly increased incidence (45 per cent). These findings indicate that the pancreatic lesion is to be correlated with the alcoholism rather than with liver pathology.

\* \* \*

**CONGENITAL GLAUCOMA**—J. W. Bettman and G. W. Cleasby. *Pediatrics*, 32:420 (Sept.) 1963.

The early recognition of congenital glaucoma in an infant may make the difference between a life of blindness and one with sight. Photophobia, lacrimation, and/or haziness of the cornea suggest congenital glaucoma and necessitate competent ophthalmologic examination. This must be conducted under general anesthesia. The findings are discussed in this paper. Medical therapy should not be attempted except as a supplement to surgery. Goniotomy is the operation of choice for congenital glaucoma.

\* \* \*

**ALL PSYCHIATRIC EXPERIENCE IN A COMMUNITY**—E. A. Gardner, et al. *Arch. Gen. Psych.*, 9:369 (Oct.) 1963.

A continuing case register of virtually all psychiatric service provided to the residents of a community has been maintained since January 1, 1960. A report with identifying and clinical information is received for each episode of care, whether diagnostic or therapeutic, from all psychiatric facilities and from psychiatrists in private practice. Analysis by computer programs permits considerable flexibility. During the first year, one out of every 60 persons was reported to the case register, indicating both a prevalence and incidence of 8.5 per 1,000 population for psychiatric service. Without an unduplicated count the reported number under care for the year would have been 30 instead of 17 per 1,000 population. One fourth of the admitted patients were seen only in private practice. The

current analysis suggests some hypotheses and clues for longitudinal studies.

\* \* \*

**EFFECT OF EXERCISE ON LIPOPROTEIN LIPASE ACTIVITY OF RAT HEART, ADIPOSE TISSUE AND SKELETAL MUSCLE**—E. A. Nikkilä, P. Torsti and O. Penttilä. *Metabolism*, 12:863 (Sept.) 1963.

Rats were forced to increase their physical activity by running, and the lipoprotein lipase activity of the heart, adipose tissue, and skeletal muscle was compared to that of resting animals. Exercise produced a significant increase in the activity of myocardium and a decrease in the activity of the adipose tissue.

\* \* \*

**DIAGNOSIS OF MAPLE SYRUP URINE DISEASE (BRANCHED CHAIN KETOACIDURIA) BY IN VITRO STUDY OF PERIPHERAL WHITE CELL**—J. Dancis, J. Hutzler and M. Levitz. *Pediatrics*, 32:234 (Aug.) 1963.

The metabolism of the white blood cell has been studied in five infants with maple syrup urine disease. An inability to decarboxylate the 3-branched chain ketoacids was demonstrated.

\* \* \*

**CHRONIC MIDDLE EAR DISEASE**—B. Proctor. *Arch. Otolaryn.*, 78:276 (Sept.) 1963.

Preoperative studies in chronic middle ear disease, although essential, do not give the complete picture of the extent of pathology. The otological surgeon must complete this study in the initial explorative stage in order to arrest progression of inflammatory disease and to attempt preservation or restoration of hearing. A step-by-step method of surgical exploration, with emphasis on the anatomy encountered, is described. Some comments on the methods of handling various situations are expressed.

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*Dosage:* In rheumatoid arthritis, the initial daily dosage ranges from 2 to 4 tablets (1.5 to 3.0 mg.). The dosage is then decreased gradually to the minimum that will maintain sufficient relief; this may be as little as 1 tablet (0.75 mg.) per day. After extended therapy, it is especially important that the drug be withdrawn gradually to allow recovery of normal adrenal function.

1. Boland, E. W.: *J.A.M.A.* 17:835 (Oct. 15) 1960. 2. Black, R. L., et al.: *Arthritis and Rheumatism* 3:112 (April) 1960.

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## So-Called Cafe Coronary Not Always Heart

Sudden deaths of middle-aged or elderly persons in restaurants may be attributed to a heart attack when the actual cause of death is suffocation due to food blocking the windpipe, Dr. R. K. Haugen, Fort Lauderdale, Fla., said recently.

In the typical case, the victim suddenly stops eating and talking, then collapses without any indication of distress, Dr. Haugen of the Office of the Broward County Medical Examiner wrote in the October 12 *Journal of the American Medical Association*.

He cited nine instances in Broward County which were investigated in the past several years. In almost every case, he said, the initial opinion rendered was that death was due to coronary artery disease, but autopsies later revealed that the victim's airway had been blocked by a large piece of unchewed meat, fish, or fat.

Dr. Haugen said the precipitating factors were considered to be acute alcoholism, poor teeth, and bad table manners.

Since the food cannot be removed manually by way of the mouth, he said, the only effective means of treatment is an emergency on-the-scene throat incision.

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## Coronary Disease Not Linked to Blood Pressure, Obesity

Neither high blood pressure nor obesity was found to be associated significantly with the development of coronary heart disease among 527 railway operating employees, it was reported in a journal of the American Medical Association.

Writing in the October *Archives of Internal Medicine*, Dr. George E. Dimond, Detroit, said employees, developing some degree of high blood pressure between 1925 and 1942, were studied in 1962.

All the men had normal blood pressure when first seen in the medical department of the New York Central System but before age 50 had developed some degree of high blood pressure ranging from variable but usually normal to a stable high level, he said.

The follow-up analysis showed that severe high blood pressure was associated with a significantly increased incidence of cerebral vascular accidents, medical disability, and death before age 70, Dr. Dimond reported. However, he said, the incidence of coronary heart disease was not related to the degree of high blood pressure.

Compared with the men who usually had normal blood pressure, he said, men with definite hypertension who developed coronary heart disease did so slightly later in life, had about twice the chance of dying with the first heart attack, and had a short-

ened life expectancy if they did survive the first attack.

Therefore, he concluded, successful treatment of hypertension cannot be expected to reduce significantly the incidence of coronary heart disease. But, he added, it is possible that early and prolonged control of hypertension may improve the life expectancy of the coronary patient.

The close relation of cerebral vascular accidents, disability, and premature death to stable high blood pressure suggests that sustained lowering of blood pressure will improve the prognosis substantially, he said.

Obesity among the 527 workers was associated with a significantly increased frequency of diabetes but was not related to the development of coronary heart disease, cerebral vascular accident, or longevity, Dr. Dimond also reported.

"Sustained weight reduction in obese patients may lower the incidence of diabetes and be desirable for many reasons," he said, "but relative body weight in a hypertensive group is not important in the development of coronary heart disease."

## Preemie Survives Heart Surgery

(Continued from Page 48)

ure, he said, an operation to close the duct was performed on the 54th day of life. A "dramatic recovery" followed, he said.

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